THE JOURNAL of the Oklahoma State Medical Association

VOLUME XIII MUSKOGEE, OKLA., MARCH, 1920 NUMBER 3

## HYPERTROPHIC STENOSIS OF THE PYLORUS IN INFANCY*

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This condition is a distinct pathological entity and should not be confused with those gastric disturbances which present, at times, some similar symptomatology. There can be no question but what the lives of many infants have been sacrificed because this condition has not been recognized soon enough, or not at all. One of the reasons for this has been because too many men of authority believed this condition to be purely a neurotic one and the spasm had no gross pathology in connection with it. Until very recently this view was generally accepted, viz., that pylorospasm was a neurotic condition in nearly all these cases and the hypertrophic stenosis had nothing to do with it. Recent writers of authority take the stand that these cases of so-called neurotic spasm are, in the main, cases of mild hypertrophic stenosis, but admitting that there are gastric conditions which cause spasm and show no evidences of any stenosis, but they are not cases in which persistent spasm is found. It would seem to be a wise decision, that when in doubt, call it hypertrophic stenosis.

This condition was first brought to the attention of the profession by Hirschsprung, in 1888, when he reported two cases with necropsies, and gave a very complete clinical description of it with the pathological findings. Holt[1] says that without doubt the earliest recorded case of the condition is the one of Hezekiah Beardsley, of Connecticut, who in 1788 described the clinical symptoms and findings at necropsy in an infant, and that one can have no hesitation in concluding from his description that the disease was exactly as we see it today. Pyloric stenosis of infancy is regarded by some writers as essentially a condition of muscular spasm, the hypertrophy being secondary; others have considered the essential lesion to be a chronic hypertrophy, plus the spasm; still others, claim two distinct types, spasmodic and hypertrophic. Strauss and Abt[7] are conducting some animal experiments to determine the correctness of these views. Their work seems to point to the congenital origin of the condition and are confirmed by Coutley[3] who cites a case of Dent's in which this condition was found in a seven months premature fetus. They are working on the basis that if this condition is produced by hypermotility and spasm, they ought to be able to reproduce it by producing spasm and hypermotility, and if this physiologic effect does not produce a hypertrophic tumor, such as is found in congenital stenosis, it would speak highly for the congenital origin of the condition. All their experiments produced hypermotility,

*Read in Surgical Section, Annual Meeting, Muskogee, May 21, 1919.

vomiting and spasm, but no hypertrophy, such as is seen in pyloric stenosis. They assert that the reason the symptoms do not start at birth can be explained by the following hypothesis: The new-born infant for two or three days after birth, gets but a few drops of colostrum and a very small amount of milk; the milk amount gradually increases during the first two or three weeks. They believe that like all other internal organs, and like other physiological functions in the body, the stomach does not reach its physiologic limit as to motility, until that time. That is to say, the newly-born infant has a very small amount of muscular activity, but this physiological action is gradually developed and does not reach its full limit until two or three weeks after birth. It would appear, according to these investigators, that the greatest argument against the physiologic origin of this condition is, that in a physiologic hypertrophy, that portion of the stomach which shows the greatest muscular activity would show the greatest amount of hypertrophy. From a mechanical standpoint, there is less muscular action at the pyloric ring than there is at the pyloric antrum. It is also contrary to conditions in other parts of the body and the rate of tissue growth, that such a tremendous amount of hypertrophy should occur in such a short time. Holt[1] and Downes are firm in their belief that from their observation of these cases, in the early weeks, that *in all cases* the hypertrophy precedes the spasm; that hypertrophy continues long after the spasm has subsided they claim to have ample proof. They have repeatedly observed cases in which unmistakeable tumor could be felt, after vomiting and peristalsis had ceased, and a large number of their cases showed at necropsy, a tumor in children who had died from other causes. In Howland's case a tumor was present in a child who died of an acute disease four months after recovery without operation. Holt says the clinical course and the uniform pathologic findings have convinced him as well as his colleague (Downes) that a division of cases into spasmodic and hypertrophic types is not admissible. There are seen in early infancy a variety of gastric disturbances which may present some of the symptoms of hypertrophic stenosis, but careful observation shows that they are quite distinct from them. Cases of true hypertrophic stenosis differ much in degree. In a very few is the obstruction complete, but hypertrophy undoubtedly congenital, is the essential lesion in all, *the spasm being added as secondary condition.* Strauss and Abt divide these cases into two classes:

1. (a). Large tumors with almost complete compression of the mucous membrane and complete obstruction. (b). Small amount hypertrophy of muscularis, but with almost complete compression of the mucosa and complete obstruction.

2. (a). Large tumors with only partial obstruction and partial compression of the mucous membrane. (b). Small amount of hypertrophy of the muscularis and only partial obstruction.

They believe that many of the so-called pylorospasms which are treated medically with good results, but show recurrences of symptoms from time to time, belong to the class of hypertrophy with partial obstruction. Such cases have been recorded by Marie, Russell, and Landerer.[6] This condition can hardly be considered an infrequent one since Holt has seen 121 cases from 1910 to 1917, and has seen 83 cases in the three years prior to 1917, the diagnosis in practically every case being confirmed either by necropsy or operation. The condition predominates in the male sex, 85 per cent of Holt's cases were males. Still[4] reported 42 cases, 35 of which were males. Ibriham[4] found boys affected four times as often as girls.

## SYMPTOMS AND DIAGNOSIS.

A very definite symptomatology is given in this condition, which should, in itself, serve to make a differential diagnosis between it and other gastric conditions associated with nausea and vomiting. There are only a few other conditions in the new-born babe, which might cloud the diagnosis, but if what Holt says is true, then there should not be much difficulty in arriving at a correct diagnosis. He

says,[1] "It is inconceivable that the hypertrophy such as has been found by operation to exist two or three weeks after birth could have developed as a result of spasm. *Furthermore, I hold that persistent spasm of the pylorus without hypertrophy has not yet been established.*"*

Since age is a great factor in the occurrence time of hypertrophic pyloric stenosis, there should be no difficulty in arriving at a diagnosis, four-fifths of the cases being classical. Given an infant, usually breast-fed, who has nursed well, gained normally in weight, has had sufficient and well-digested stools, and in fact has shown few or no signs of digestive disturbances, who begins to vomit persistently and forcibly; these symptoms have their beginning most frequently in the third or fourth week of life, and in most instances their onset is abrupt and without assignable cause. To the forcible vomiting are added marked constipation, steady loss in weight, and all the symptoms belonging to a failing nutrition. Careful examination reveals definite gastric peristaltic waves, and in most cases a palpable tumor in the pyloric region. The vomiting does not at first attract the attention of the mother, but later on becomes so characteristic that a diagnosis can almost be made from that alone. It differs markedly from the usual vomiting seen in young babies, in that it occurs soon after nursing, often while the child is still at the breast. It is forcible and projectile, the food being fairly shot out of the mouth to a distance of some feet at times. There is practically no eructating or spitting of food in small quantities, but it comes out in large amounts, the entire contents of the stomach, usually repeated after each feeding. If the child retains one meal, it will generally following the next meal vomit both. There is no fever or pain, and in the early stages and for some time there is no impairment of the appetite. The vomiting becomes persistent and change of food relieves the condition for a short time, but it surely recurs with as great severity as before. The gastric peristaltic waves are a constant symptom and are mentioned as being of the greatest diagnostic value. In order to observe them, the child should be stripped during feeding or immediately after the stomach is filled; there will be seen in the upper abdomen peristaltic waves, passing from left to right across the median line, followed very frequently by immediate vomiting. Slight atypical waves may be seen in conditions other than hypertrophic stenosis, but they lack the deep regularly recurring waves of this condition. While pyloric tumor is present in 75 per cent. of the cases, according to Holt, it cannot be said to be essential to diagnosis. It will usually be found under favorable circumstances, and by careful observation, but men of much experience have been unable to find it, when one was demonstrated to be present, and others found it when it was demonstrated by necropsy or operation that none was present. At best the tumor is not larger than a good-sized peanut and can be felt when present, about 3 cm. to the right and a little above the umbilicus. It is best found by bimanual palpation, the palm of the left hand making pressure from behind, while the tumor is sought for with the tips of the fingers of the right hand. It may be obscured by an enlarged liver and by gaseous distention of the colon. Abnormal gastric retention is, according to Holt, fully as reliable as is the Roentgen ray and bismuth meal. This may be determined by giving the baby a test meal of two or three ounces of breast milk, or diluted condensed milk, and at the end of two or three hours, by means of a small suction apparatus the stomach is emptied. Simply passing a tube is not enough, considerable suction must be employed to empty the stomach.

The secondary symptoms, constipation, wasting and scanty urine, are simply the result of the constant vomiting. In the more severe cases the closure of the pylorus may be complete and the stools contain no fecal matter whatever. In most cases some food passes the pylorus. At times at necropsy, the pylorus admitted only a fine probe, yet the stools were of fair size and fecal in character. *Wasting is a constant symptom and its rapidity is the best guide to the seriousness of the case.* In marked cases the loss in weight may amount to two or three ounces

*Italics are mine.

a day. In cases with constant vomiting, the urinary secretion is very scanty and the association of these two symptoms may lead to a diagnosis of uremia. There is no fever and no pain and the appetite remains good, the child taking the breast immediately after vomiting. In milder cases, though peristalsis is marked, the vomiting may occur only two or three times a day and for days there may be none. The bowels move regularly with fecal stools and are about normal in amount; the weight may be stationary or may even show a slight gain. Gradually, in from six weeks to four or five months, the vomiting ceases, no more peristaltic waves are seen and the patient has apparently recovered, and even in these the tumor may be felt as late as the sixth month. Holt concludes that after one year relapses are infrequent. The use of the Roentgen ray with the bismuth meal will probably not give any more necessary information than will the retention test, besides valuable time may be lost in making these tests and the child die because of failure to get early surgical attention; even in the milder cases it is questionable whether the results are commensurate with the risks incurred. The principal difficulty in differential diagnosis would seem to be to distinguish between cases of indigestion with protracted vomiting, from hypertrophic stenosis. The diagnosis is to be made from the history, tumor, retention, and wasting. The fact that at times the vomiting may be forcible does not warrant a diagnosis of hypertrophic stenosis. There are a number of conditions, other than hypertrophic stenosis, in which pylorospasm is present. It is present in ulcer of the duodenum, in atresia of the oesophagus, in tuberculous peritonitis, and some small peritoneal fold may cause a kink in the duodenum, such a case having been recorded by Grulee and Kelly,[5] and Downes[5] has reported a case in which a small tumor projected into the pylorus and caused spasm. It is therefore evident, according to Holt, that there are quite a number of pathologic conditions in which gastric peristalsis and presumably pylorospasm, may be occasionally seen. To confuse these cases with hypertrophic stenosis, or to consider them as closely allied pathologic conditions, just because they have one or two symptoms in common does not, according to Holt, seem justifiable. Hypertrophic stenosis should be considered as a pathologic entity, though its symptoms vary greatly, according as the lesion is mild or severe. The writer believes that we are all too careless in our history taking, and its interpretation and that many of our mistakes could well be avoided by listening more patiently to the story of our patient's illness. Case records are not kept at all, or if kept are not sufficiently complete to be of any value. Too often the practitioner trusts to memory, and memory is a treacherous thing with a life at stake. There is not a physician within the sound of my voice but who is entirely capable of diagnosing this condition if he properly gets the history and then interprets it correctly.

## MEDICAL TREATMENT.

The medical treatment of this condition consists in careful feeding and stomach washing. The gastric lavage should be practiced at first twice a day, and later at longer intervals; it serves the purpose of thoroughly cleansing the stomach, and the water should be used at a temperature of about 112 degrees. If it can be secured, breast milk is the preferable food, but one not rich in fat is desirable. The common practice of weaning as soon as symptoms develop is, according to Holt, most unwise. In default of breast milk, a modified milk low in fat should be employed. Cases respond differently to the quantities and intervals of feeding. Holt gives from one to three ounces at three or four hour intervals, or smaller quantities and shorter intervals, if it be breast milk. With the longer intervals, water should be given between feedings. In greatly prostrated patients, hypodermoclysis should be used daily, 150 to 250 c.c. of a 4 per cent solution. Rectal feeding is not considered of any value.

Sauer[7] uses thick farina in feeding these cases, and reports twelve cases in which thick cereal feeding caused a very rapid subsidence of the vomiting in all but one. With the passage of the food beyond the pylorus, in practically all these

cases there was a rapid improvement in the nutritional condition of the child. After thick cereal feeding had been persisted in for some time, it was found that liquid food passed beyond the pylorus. It thus seems to be well proved that by means of thick cereal the constriction of the pylorus is gradually loosened, so that food will pass through the pylorus almost normally. Sauer states that the cereal feeding in its thickened state will be held in the stomach and passed into the duodenum, but will be regurgitated when thinned with boiled water. He concludes that thick cereal cannot be ejected from the stomach by the sudden explosive contraction that produces vomiting of milk feedings, and that thick cereal is moved along by the slow peristaltic contractions of the gastric wall.

## SURGICAL TREATMENT.

The earlier operations for this condition were jejunostomy, gastroenterostomy and pyloroplasty, but the mortality was so great from these, and in face of the fact that high medical authority was advising medical treatment, surgery did not gain much headway in this condition until after 1913, when Rammstedt reported a case in which he simply divided the circular muscular layer of the pylorus by external incision, and the case made an excellent recovery. The Rammstedt operation is the only operation done at the Babies Hospital, New York, for the past four years. Previous to that time the operation done was gastroenterostomy. Up to 1917, 67 cases had been operated in that institution by this method (Rammstedt) with a mortality of 24 per cent, while the mortality from gastroenterostomy was 51 per cent. These cases all occurred in the same institution and all were operated by the same men, where the general run of cases is much the same and where the after treatment was identical, hence, is of more conclusive value than if it was a report from different hospitals and different operators. The advantages of the Rammstedt operation are self-evident from these figures, since the mortality rate is 50 per cent less than is the rate from gastroenterostomy. The most importnat advantage is the time required to do this operation as compared with gastroenterostomy. It can be done in from ten to fifteen minutes, while the other requires at least 45 minutes to one hour, and then the operator must be more skillful than the average man who is doing surgery. In the Rammstedt operation, the stomach is not opened and the risks from nonunion, leakage and peritonitis are eliminated. There is no hemorrhage to speak of and no suturing is required and the shock must of necessity be very much less, as is the temperature reaction, food can be pushed more rapidly, and the disturbances of digestion, particularly diarrhea, which is usually troublesome after gastroenterostomy, are much less frequent and severe. There is no question but what the Rammstedt operation requires more refinement in technic than does a gastroenterostomy.

Wounding of the mucosa has occurred, but has not caused death in every instance, but the chances from leakage followed by peritonitis from this accident are very great and have caused death. Incomplete division of the muscularis is to be avoided and if a second operation is necessary, death occurs usually. As between the Rammstedt operation and gastroenterostomy, there appears to me to be no choice, even though it requires more refinement in technic. This question comes to me; should a man who is not competent to do the proven best operation, attempt to do surgery? Recently a surgeon said to the writer that he did a gastroenterostomy for this condition because he found it easier to do, and this in face of the fact that the mass of evidence shows that the Rammstedt operation is the better one. No man who claims to be a surgeon should admit that he is not competent to do an operation generally accepted as the best one. The fact that a human life is at stake seems to cut no figure with this type of surgeon, especially since it is only a baby, but some of our babies have become presidents in the past, and others will in the future. The cause of death from this operation was in nearly all cases due to shock, but all of them were in extremely bad condition at the time of operation, the symptoms in none of them having lasted less than four and a half weeks. The mortality in cases brought to operation early has been shown to be only fifteen

per cent from the Rammstedt as against 51 per cent from gastroenterostomy, and this in the hands of operators of great experience. What must the mortality be with men of less operative ability? Does any surgeon think he is doing his patient justice in refusing to give him this proven advantage?

## AFTER-TREATMENT.

According to the routine carried out at the Babies Hospital, under the direction of Drs. Holt and Downes, the infant is wrapped in a warm blanket before leaving the operating room, and when in bed is surrounded by hot water bottles outside the blanket. For an hour or two the head of the bed is kept lowered to prevent the aspiration of mucous into the larynx. When nourishment is commenced, the head of the bed is raised to a level position. Ten or twelve hours later the patient is placed in a semi-erect position, which tends to prevent regurgitation of food and permits the more easy escape of gas. As soon as the patient has been placed in bed, a hypodermoclysis of 120 cc. of salt solution (physiologic) is given, and if the condition is poor, a hypodermic of five minims of adrenalin, 1-1000 is given and repeated in from four to five hours. Transfusion in a few cases of collapse has been of benefit.

One and one half hours after the operation, provided the patient has sufficiently recovered from the anesthetic, 10 cc. of water are given, and one and a half hours later four cc. of barley water and four cc. of milk are given. Breast milk is given every three hours, alternated with water, and gradually the amount is increased, so that at the end of 48 hours about 30 cc. are given at a feeding, with four cc. of barley water. The barley water is then discontinued and the milk gradually increased, so that by the end of the eighth day the patient is having 60 cc. every three hours. The baby is weighed before nursing and at intervals of three minutes until he has nursed 60 cc. from the breast. By the eleventh or twenfth day the patient is nursing entirely and is able to leave the hospital. If the mother is not able to nurse the baby, a wet nurse is employed. In well-nourished children the sponge bath may be given daily, but in emaciated ones an oil rub is preferable. In cases of vomiting due to the accumulation of gas in the stomach the child should be raised to an upright position after feeding, and if this does not suffice, a soft rubber catheter may be passed into the stomach before feeding; if this does not relieve the condition, gastric lavage may be resorted to. If the bowels have not moved within 24 hours after operation, give one teaspoonful of castor oil; there should be from two to three stools every day.

## MORTALITY.

A low mortality in these cases of pyloric stenosis depends on an early diagnosis, and not too prolonged an attempt to cure them by medical means, but to resort to surgical intervention when the case shows no prompt improvement. The longer operation is delayed, in a case with well marked tumor, the greater the surgical risk and the less chance for the child to recover. From the observations of Strauss and Abt, the size of the tumor is no reliable index to the amount of the stenosis, and a small tumor may cause just as much obstruction as a large one. Operation by the Rammstedt method will insure a mortality of not much more than five per cent. in cases that have not vomited more than two weeks. Sudden and unexpected death in palliatively treated cases is not uncommon, probably due to acidosis caused by defective urinary secretion.

## CONCLUSIONS.

1. Hypertrophic stenosis in infancy is a pathologic entity and should not be counfounded with other pathologic conditions which may be accompanied by some similar symptoms.

2. In the milder forms the patients often recover with only medical treatment.

3. All those who do not improve markedly within one or two weeks should be considered as surgical cases and treated by operation.

4. The symptoms which indicate surgical interference are rapid loss of weight, persistent and forcible vomiting, active gastric peristalsis, and especially if tumor be present.

5. The sooner the patient comes to operation the more surely will the result be successful.

6. That the Rammstedt operation seems now to be the operation of choice and should be done in all cases coming to operation. This conclusion would seem to be warranted from the results at the Babies Hospital, where the same operation, same operators and the same after-treatment, has given such brilliant results.

7. The after-treatment of these cases is of very great importance, as it is following any major operative procedure and that many good operators are faulty in their after-care of their patients.

8. Patients not operated on usually show no symptoms after the first year, but there is a possibility that this apparent cure may be the basis of pyloric obstruction which is found in later life.

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I have quoted very freely from the classical paper of Holt designated as No. 1.

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4. Chas. Gilmore Kerley: Am. Pediatric Ass., May 28, 1908.

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### MALARIA IN THE BALKANS.

Americans in the Balkans have changed their opinions of the Turk character. They do not blame him now because he appears to be lazy, inefficient and despondent. Wherever he is to be found in Macedonia, Albania, Montenegro, Bosnia, and Herzegovina, his characteristics are the same as those of his Christian neighbors, with whom he lives in greater peace than do the constantly bickering Christian tribes and nascent nations among themselves.

Dr. Regina Flood Keyes, of Buffalo, New York, an American Red Cross physician who has lived in the Balkans for several years and who has been decorated by the French, Greek and Serbian Governments for operations performed under heavy bombardment, attributed the backwardness of the Balkan peoples to two causes, sand-fly fever and malaria.

"The Red Cross fight against typhus, small-pox, cholera and sex diseases in the Balkans attracts much attention in the press," says Dr. Keyes, "but our real work out here is the struggle to down malaria. More British soldiers died or were incapacitated by malaria in the Struma valley during the war than were killed in the taking of the Grande Couronne."

"The whole littoral of the eastern Adriatic from Fiume down to Aviona is a hot bed of malaria and sand-fly fever while the northern shore of the Aegean from Salonica to Constantinople is even worse America, if she is going to play her role in the world, must do for the Balkans what she did in the Panama zone. These peoples must be taught drainage, how to kill the mosquito and to maintain domestic sanitation. It is a work of years but we have made a good start in the last thirty months. Malaria causes the all too obvious despondency of the Balkan peoples. To enable them to rise we must kill the mosquito."

# EXOPHTHALMIC GOITER.*

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In selecting this subject, I realize something of the scope of clinical manifestation and will omit from consideration those conditions where the structure of the gland has undergone permanent change, as in advanced colloid goiter, malignant tumors, etc.

The treatment of goiter dates back as far as the history of the disease. It is one of the diseases to which the most fantastic remedies of the Middle Ages were applied. There are few diseases for which more varied remedies have been advocated, ranging from the touch of a dead man's hand to the removal of a part or all the gland. Many volumes have been written on this disease and its treatment.

I will not attempt to discuss the literature on the subject, but will start my few remarks from the experiments of E. C. Rosenow when he grew a pus organism from the thyroid of a patient suffering with thyrotoxicosis. As pointed out by Rosenow, this would suggest an inflammation of the thyroid from bacteria carried to it through the blood stream. The removal of chronic pus foci in these patients has proven the correctness of this suggestion and has made many of us revise our ideas on the etiology and treatment of this condition, and we feel that we are on a more rational basis. Truly our results are far more satisfactory. It makes little difference where the pus focus or foci are carried, they must be removed completely if cure is to be expected. Like many other diseases, due to blood-carried infections, we find the tonsils and teeth the most common offending organs, as it is here that the most favorable locations are for a chronic foci.

Since 1916 we have treated, at the Chickasha Hospital, twenty-six cases of thyrotoxicosis, that is, where this condition was the predominating cause of ill health. In but one of these cases did we do surgery on the thyroid gland, and in this case we later discovered a dental pus focus which we had overlooked. All of these cases were treated by removing diseased tonsils and in some also diseased teeth. The result in all these cases has been a cure of the thyrotoxicosis. The improvement has been more rapid and thorough than when we removed part of the thyroid gland.

In 1916 The Central Oklahoma Medical Society met at Chickasha and we presented in clinic at the Chickasha Hospital a case of thyrotoxicosis and at that time removed the tonsils and teeth. This patient made a speedy and lasting recovery and is today a robust, vigorous woman. I mention this case in particular as some are present at this meeting who saw the patient and wished to know the results.

There are times when the thyroid is physiologically more active than others, as at puberty, menstrual periods, pregnancy, etc. When at these times, if there is any noticeable increase in the size of the gland, one should look after the tonsils and teeth and, if diseased, should remove them, as a prophylactic measure, to prevent infection of these active glands.

## DISCUSSION.

**Dr. Ross Grosshart,** Tulsa: I think the Doctor read a paper on this subject seven or eight years ago which I championed and we both were ridiculed.

Again there is nothing that has swept the country and has done more good for humanity than what the dentists have done for focal infection of the mouth, as well as a few physicians who recognized focal infection as being the cause of a great many reflex conditions that we had in the past attributed to other causes.

I read a little paper on this subject before our County Society a few weeks ago along this same line and made the remark in this paper that when you said goiter you said infection, and that this infection was most generally a streptococci and the most prevalent points of infection, or foci, were in the tonsils and teeth. This

*Read in Surgical Section, Annual Meeting, Muskogee, May 21, 1919.

condition may not show any local evidence of pain or swelling which would draw the attention of the diagnostician to these parts, but the x-ray and close observation will generally find the foci and when removed, the hyperthyroidism will disappear and the gland will return to a normal condition insofar as it has not been transferred to scar tissue, or to colloid degeneration.

While it is a little off the subject of the paper, I will make a further remark that arterial sclerosis is due to a focal infection and not a condition of senility, and when we learn to locate and find the infection and remove it, we will cure our cases of arterial sclerosis and man's longevity will be increased many fold and his general metabolism improved and will probably be made to live as old as Methusaleh.

This subject as yet is in its infancy, while at the present time we have a great many good men who have recognized this as being the downfall of the human metabolism and are looking upon all cases of neurasthenia, arterial sclerosis, rheumatism, sleeplessness, nerve exhaustion, and a great many other conditions as having their origin in some foci of infection.

It will probably be a little far fetched at this period to make the declaration that I am about to make, and in which I am a firm believer, that when we become more proficient in diagnosis of focal infection, and the public realizes the many ailments and conditions that result therefrom, and that treatment should be instigated early, man's longevity will be increased many fold. As I have said heretofore, a man is no older than his arteries, and what we have been terminating arterial sclerosis, if my statement is right, when we eliminate focal infections, the causes of arterial sclerosis, the causes of the disturbances of the internal secretions, man's pain and senility will be practically eliminated, but there is many a step and a great deal of future research to bring about these results. When we have obtained the active principles of the internal secretions of the different glands and can reproduce them in the chemical laboratory, or extract them from the animal, it will be possible, after having eliminated the foci of the infection, to administer the proper dosage of the active principle of the internal secretion that it is sufficient to bring about, or support the normal physical condition of our bodies to perpetuate life to any age, far beyond that of three score years and ten. We will also be able to take a new born infant and produce the size, habits and mentality to a uniform standard which may be set as being a perfect man or woman by the administration of the internal secretions, or the control of internal secretions, which are closely allied to each other, i.e., ovarian and thyroid.

So let me impress upon you that the physician and surgeon of today is not what he will be in the future. My advice is to make careful diagnosis and acute observation with the one idea in view that focal infection is the downfall and cause of the suffering of the human anatomy, and it is his duty when consulted to use all the known means at his disposal to locate the foci and remove it, or have it removed at the earliest possible moment, and he will have accomplished for his patient the enjoyment of good health and a reputation for himself and his profession, and will redeem the wonderful science back to that pinnacle that it rightly deserves, and the elimination of the osteopath, chiropractor, and Christian Scientist.

**Dr. Livermore**, closing: It has only been about four years since I made a statement before this meeting—Doctor Grosshart will remember it, I think—that if we would go after the focus in the tonsils we would go a long way toward obviating the necessity of surgery in these conditions and prevent the death of the patient. At that meeting—it was not like this—I could hardly get to my seat. I see Doctor Blesh has left the room. I think it was Doctor Blesh who jumped to the floor and said that anybody who said the tonsil had anything to do with a goitre was crazy. I hope he has changed his mind on that proposition, because today we are standing on a proposition where it is not alone Livermore's say, but there are some ten or fifteen men in the United States who have made the experiment and have gotten satisfactory results.

# ACUTE INFECTIONS OF THE UPPER RESPIRATORY TRACT.*

AUSTIN L. GUTHRIE, M. D.
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The recent epidemic of so-called Spanish influenza has brought before us the fact that we have as yet much to learn regarding the cause of infections and the methods of their transmission.

Some of our previous theories have been substantiated while others are being severely shocked. Our recent army experience has substantiated the previous knowledge that the acute infections are directly transmittable from one individual to another; that they follow the more frequented routes of travel; that they are more frequent in congested districts and they are worse during dry windy weather. It has been very noticeable in the army camps that the respiratory infections were markedly increased during dry weather. In order to prevent a spread of the infection by wind and dust, drill grounds were located a considerable distance from the barracks, floors and roads were oiled and grass allowed to grow in unused vacant areas.

The recent epidemic started at an Atlantic seaport and spread tree-like first along the more frequented routes, gradually branching until the most remote sections were invaded. This sequence of development goes to prove that the disease is either directly or indirectly carried by individuals and not the result of atmospheric or climatic conditions.

The old theory of taking cold from being in a draught has been repeatedly exploded. Unless the air which blows upon the individual contains infectious organisms which may become lodged in the upper respiratory passages, there will be no ill effect from it—not so much as a swollen mucous membrane. Of course, the temperature of a draught may be so low that if allowed to strike an exposed part of the body it will cause a lowered resistance of the part by reducing the blood flow to it. This lowered resistance, or anemia, will favor the development of infectious organisms if present. It is in this manner that our so-called colds are caused by exposure.

In order that effective prophylactic measures may be instituted, we should first know the causative agent, and more important still, we must know the method of its transmission. By knowing the causative agent we have a basis upon which immunizing serums and anti-toxins may be founded. We also become more or less familiar with its morphology and predilections, and by this knowledge we may institute certain measures that will lessen the susceptibility to infection and prevent certain complications and sequelae after the tissues have been invaded.

Serums and vaccines are of but little value for diseases which in themselves do not confer immunity. I do not wish to be understood as condemning this form of prophylaxis as of no value. I do believe that considerable good may be derived from it, especially during an epidemic of short duration. We may get a complete immunity entirely preventing the disease or only a partial immunity that will temper its course and severity. It is not rational to believe that this immunity so conferred can be more lasting than that conferred by the disease itself. We do know that most of the respiratory diseases do not confer immunity for any considerable time, but on the contrary rather predispose to subsequent attacks. Whether this predisposition to subsequent attacks is due to some local pathological change favoring the entrance of the special organism or to a more general disturbance, I am not prepared to discuss.

It is, however, through our knowledge of the methods of transmission that we are able to do the most good for the greatest number by way of preveniton.

The respiratory diseases are mainly transmitted by air conduction, although some individuals may become infected, as Forchheimer has so aptly stated, "by

*Read in Section on Eye, Ear, Nose and Throat, Annual Meeting, Muskogee, May, 1919.

food, fingers and flies." Under food we include water and foreign substances that enter the mouth; by fingers we refer to all unsanitary conditions; by flies we mean any transmission other than by human agencies. I refer to the air as a medium through which particles containing the organisms are transmitted from one individual to another. This transmission is either direct or indirect; direct in that the secretions from the nose and throat containing the micro-organisms are transmitted by sneezing and coughing. The distance through which we may become infected in this manner is limited under ordinary circumstances to four feet. Indirect transmission in the sense that these secretions are carried by wind and dust after having been deposited on the ground.

It is not necessary for the individual to have the disease in order to be a carrier of its contagion. These individuals, known as carrier-contacts, continue to go about their business and spread the contagion. They are indeed a fruitful source of infection and doubly dangerous from the fact that they are unknown.

Carrier-contacts are determined by nasal and throat cultures taken every 48 to 72 hours, i.e., if the first culture is found positive another should be taken in 48 hours and the patient considered a carrier until two negative cultures have been obtained. All sprays and swabs should be discontinued 24 hours before the culture is taken. Nasal cultures are found less often positive than throat cultures properly taken. When I say properly taken, I mean that the culture must be taken from the tonsillar crypts either by expression or better by introducing a loop into them. Many cases will be found positive by this method after repeated negative cultures made from pharyngeal swabs hurriedly used. In cases where nasal smears are positive, you can almost invariably demonstrate to your own satisfaction the presence of sinus infection. In the absence of sinus involvement and in those cases giving negative cultures from the tonsils, I have only been able to obtain positive cultures for a few days. As a rule the second culture will be negative. Very few positive throat cultures are found in those who have had previous tonsillectomies.

I offer this as evidence of the necessity for the organisms to find some place of retention other than an exposed mucous surface for their propagation. I doubt if they will penetrate a healthy unbroken mucous surface. They are occasionally found in the gums about a decayed tooth or in some ulceration but never for a long period on free exposed surfaces.

Let us consider for example the streptococcus hemolyticus which played so important a part in our recent epidemic. Over one hundred strains of this organism have been studied and in practically every instance the same strain has been found running throughout the same case; e. g., in a case of pleurisy, pneumonia, or localized abscess, the culture showed the same strain of the streptococcus hemolyticus as was found in the throat. This is almost positive evidence of one or two things, either that the two foci of infection had a common origin or that the infection was carried from one focus to the other. Some of these cases that showed an early development of pulmonary lesions may have had a direct infection into the lungs, although we are not positive of such direct invasion unless we have had negative cultures from the nose and throat. We do know that the great majority of these cases have shown positive throat cultures several days before any pulmonary condition was demonstrable. Following this knowledge and experience we are brought to the conclusion that many of these cases of pulmonary invasion were secondary infections from the foci of the upper air passages. If this is a true conclusion, then many of such cases may have been prevented by the early detection of the organisms in the nasal and pharyngeal cavities.

If these diseases are transmitted in the above mentioned way, as I believe they are, then many measures may be instituted that will materially reduce the number of cases. In order to prevent the direct transmission from one individual to another, no assemblies should be permitted during an epidemic. All individuals should sleep with their heads at least four feet apart. Contacts should be determined by culture—especially of all school children. All cases of sore throat or

elevation of temperature should be isolated until a diagnosis can be made from culture. They should remain in isolation until two negative cultures have been found.

As a general preventative measure, I have used with splendid results an oil spray of dichloramine-T. Strong solutions of silver nitrate were found to be the only effective remedy for the throat infections. Some cases showed positive cultures from the tonsillar crypts in spite of all treatment until the tonsils were removed, when they would clear up immediately.

I am fully convinced that the recent epidemic was prolonged by chronic carriers and that the secondary outbreaks which have occurred in many localities may be attributed to those individuals who are carrying the ever-dangerous organisms.

I suppose some will say that we have found another excuse for the removal of tonsils when we tell them that they are a constant danger to others as well as themselves.

Many of our rhinologists and laryngologists have neglected to impress upon the general practitioner, as well as the laity, the importance of prophylaxis in nasal and pharyngeal infections. Let us not hide behind a false modesty, but be ever ready to give to our fellow physician whatever knowledge we may have gained as specialists.

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## THE NURSE QUESTION.

J. D. Robertson, Health Commissioner, Chicago (*Journal A. M. A.*, Feb. 14, 1920), gives an account of his school for home and public nursing, conducted by his department in Chicago. Every physician knows, he says, the difficulty of securing competent nursing care for people in moderate circumstances. The school mentioned was established in August, 1919, anticipating the outbreak of influenza and grip of 1920 by a number of days. The available supply of regular nurses was early exhausted, and for a period of days the calls on the health department were at the rate of fifty per hour. There is no question about the value of the registered nurse, but the trouble is that only those in very comfortable circumstances can afford to employ them; hence the foundation of the school, with the object of both teaching and helping. The course given covers two months, the pupils spending in class, two hours a day for three days a week. Seven hundred and ninety were graduated in the first class, and 1,363 in the second. Then the coal strike occurred and the size of the class had to be limited to 1,000, the present number. A table of data concerning the first two classes is given, showing a large proportion of American born women and of married women. At no time since the graduation of the first class have they been able to meet the call for the services of these women, but no dissatisfaction with their work has been expressed to Robertson. There was opposition at the beginning, but this has mostly subsided, and it has never been sufficient to affect the work. They make no claim that their training is equal to that of registered nurses, but they do claim that their graduates can satisfactorily fill the need for the general run of cases, where all that is called for is the conscientious following of the doctor's directions. In a critical surgical case, he would prefer one with special training, but for ordinary cases they are quite as capable and often more desirable because they are willing to do housekeeping as well as nursing, and in its final analysis, nursing is simply housekeeping for the sick. At a meeting of the staff of the department of health the curriculum of the standard nursing course with a view to determing what was absolutely essential was discussed. The curriculum adopted, both as lectures and demonstrations, is given, special emphasis being laid on the taking of temperature, pulse and respiration. Many of the students learn quickly, others are slower, and the hardest two weeks, as far as the instructors are concerned, are the two weeks drilling on this course. Throughout the course, two main propositions are insisted on—absolute adherence to the physician's orders and strict cleanliness. To give some idea as to the latter, it was arranged that each woman should be given a chance to see at least one surgical operation in a hospital amphitheater. In giving medicines, the physician's orders were especially emphasized, and also instructions against any assumption of the physician's duties by the nurse. Most of the women trained have no intention of nursing outside their own families, that is ordinarily. While the output, so far, looks insignificant as compared with the needs of a population of two and a half million, a start has been made and this is the most important. There is no intention to run in opposition to the skilled trained nurse—the idea is to train a body of housekeepers for the sick. Robertson says they are training soldiers to serve under the leadership of physicians in the fight against disease—they are not training subofficers. He would be glad to see a similar movement in every health department in the land, and would give his aid to the extent of his resources to every one who desires it.

# PRIMARY GLAUCOMA.*

## Report of Case—Recovery Without Operation.

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There has been so much written on glaucoma, that I shall not attempt to enlarge upon the literature, but shall be content to report a case that might be of interest, or rather the treatment as outlined may be of some benefit to you, to know. Nothing new in the treatment itself, but the manner in which the treatment was carried out.

Patient, male, 68 years old, consulted a very competent oculist, of Chicago, who advised him to go into the hospital at once, and have an operation to relieve the tension. While arranging some preliminaries, which took about a week, the man was directed to see Dr. W. A. Fisher, who sent him to the Chicago Eye, Ear, Nose and Throat Hospital. I saw the case through the courtesy of and with Dr. Fisher. The patient's vision was 20-200, tension 76.

Treatment: Pilocarpin, two grains to the ounce of distilled water, was instilled into the the eyes every two hours, night and day, for twenty-four hours. Vision was improved to 20-40 and tension reduced to 46. This treatment was continued for 48 hours longer, when vision improved to 20-25 and tension 26 or normal. The treatment was then changed to the following: Pilocarpin, two grains to the ounce distilled water, every three hours during the day and two drops of a solution of eserin, one grain to the ounce of distilled water, at bedtime.
He is now able to read a paper, and his pupils are normal.

The point of interest in this case was the prompt response to the treatment, which was systematically given.

My object in reporting this case is that the majority of authors writing on this subject insist upon operation as soon as the case can be gotten to a hospital, no attention being given to medical treatment.

My contention is, that every case of plus tension that comes to our observation, no matter from what cause, should receive medical treatment before surgical intervention. The general cause of glaucoma is not known. We know we have increased intra-ocular pressure, but whether this is due to an increase of secretion, within the eye-ball, or to a lack of excretion, is not definitely known; in either instance, to reduce the tension is the prime object, and if this can be maintained, the eye will get well. It is thought that the dilatation of the pupil interferes with drainage through the canal of Schlemm, for it seems that the contraction of the pupil relieves the condition, so it is in this way that the miotics help and often cure permanently; but to maintain a cure, this treatment must be continued as long as there is any danger of a recurrence.

You might ask: how long to continue treatment, if no improvement is noticeable? To this I would answer, forty-eight hours; the first twenty-four hours I would use pilocarpin, two grains to the ounce of distilled water, instilled into the eye every two hours, night and day; if no improvement is noticeable, I would then change and use one per cent eserin for the same period, and in the same way. Then if there be no marked improvement after the use of the latter remedy for twenty-four hours, I would resort to surgical treatment, either to iridectomy or trephining.

I am not prejudiced against operation when necessary, but you lose nothing, and you are acting on the safe side when you use medical treatment first, where you have plus tension, with a cause; like following some injury use atropin, and if you have plus tension without a cause, where there has been no injury, or other known cause, then use eserin, or pilocarpin before any operative procedure, and if you get good results, continue the treatment, and you will not have to subject your patients to any unnecessary operation, which is not always free from complications.

*Read in Section on Eye, Ear, Nose and Throat, Annual Meeting, Muskogee, May, 1919.

# SURGERY OF THE TONSIL.*

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Probably no surgery is more generally done today than the surgery of the tonsil, and I think we are justified in stating that no results of surgery manifest greater inefficiency in technique. Tonsillectomy has for long been regarded as a minor operation, and freely undertaken by general surgeons and medical men of all grades and distinction. I shall not raise the question as to whether tonsil surgery belongs distinctly to the laryngologist, but I do maintain that tonsillectomy is a major operation, and should be attempted only by those who are thoroughly familiar with some technique that will remove the tonsil thoroughly and efficiently with as little damage as possible to the surrounding tissues within the throat.

That so much has been written upon the surgery of the tonsil, and so many instruments devised for the performance of this work is prima facie evidence that tonsillectomy is attended with difficulties, if not with unsatisfactory results, and each one is attempting to devise a technique or produce some instrument that will render the operation less difficult and the results less damaging to structure within the throat. In view of the fact that this work is so generally done, the writer is disposed to offer no apologies for again presenting this subject for consideration. The last word has not yet been spoken, I believe, upon the subject of tonsil surgery, when viewed in the light of post-operative results.

For years our best laryngologists have observed contractions, adhesions and scar tissue in throats following tonsillectomies where the greatest care had been exercised in their technique, and when everything proceeded at the time of the operations to their utmost satisfaction. The writer has heard many laryngologists state that it is utterly impossible to do tonsil surgery and not occasionally get contractions, adhesions and scar tissue within the faucal structures. Up until a year or more ago, from the end results in my own work, and from observations of the work of other men, such occasional results I deemed unavoidable. Upon a more careful consideration of these apparently inevitable results, these questions presented themselves to me:

First: Why is it that these contractions and adhesions often occurred in the simplest tonsils which presented themselves for operation, and not always in the more difficult cases when it might be possible that our technique was faulty?

Second: If nine cases could be operated and afterwards present perfect throats free from contractions and adhesions, why should not the tenth case be operated with the same results?

As a result of these questions which led to a more careful study of the histological and gross anatomy of the tonsil and its adenexia, the writer has been able to demonstrate clinically, that contractions and adhesions are due, in the main, to two causes:

First: A destruction of the whole or a part of the tonsillar plicae, the wounding of these plicae or the tearing of them from their attachments so that they no longer functionate.

Second: A destruction or wounding of the aponeuroses of the various muscles which form the tonsillar fossa, or injury of the muscles themselves.

The plicae are folds of mucous membrane which extend beyond the pillars of the fauces, with which they are continuous, covering a portion of the internal surface of the tonsil. The posterior plica, which is attached to the posterior pillar

*Read in Section on Eye, Ear, Nose and Throat, Annual Meeting, Muskogee, May, 1919.

of the fauces, and is continuous below with the mucous membrane of the internal pharyngeal wall, is constant in less than 60 per cent of cases. It may extend from one-eighth to one-fourth of an inch beyond the posterior pillar over the internal tonsillar surface.

The anterior plica is constant. It begins at the upper portion of the posterior pillar of the fauces—follows along the supra-tonsillar arch of the soft palate, where it forms what is called the triangular plica, is contiguous with the margin of the anterior pillar, and becomes continuous below, in a broad base, with the mucous membrane of the external pharyngeal wall. This plica is one-fourth of an inch or more in width above, and gradually widens as it descends, until, at its attachment to the pharyngeal wall, it is often over one-half of an inch in width. It must be borne in mind, that the basement membrane of the mucous membrane which forms these plicae, extends to become the capsule of the tonsil; the tonsil developing in the mucous membrane and not under it.

The muscles, the aponeuroses of which form the tonsillar fossa, are the superior constrictor of the pharnyx, the palato glossus, within the anterior pillar of the fauces, and the palato pharyngeus, within the posterior pillar of the fauces. These aponeuroses, if not torn or cut, coalesce so as to form a smooth, clean and unbroken fossa.

Following tonsillar inflammation, the plicae nearly always become more or less adherent to the surface of the tonsil. If they are quite firmly attached, it may take a little care and patience to dissect them free. Many may claim that they have given care to the preservation of these plicae for years. This, however, is not the important consideration in connection with these plicae in our efforts to prevent the contractions and adhesions following tonsillectomy. To avoid these sequellae, the plicae must be preserved intact, not lacerated and torn, and the anterior plicae must not be separated from its extensive attachment to the external pharyngeal wall. If this care is not taken, these plicae, in a large per cent of the cases, will become infected and slough, or they will roll up and be of no value in the healing process. If the plicae are uninjured, they will not slough, but will fall over the inner margins of the pillars of the fauces covering a portion of the fossa left by the removal of the tonsil. This, however, is not the most important result; epithelial buds for the development of new epithelial cells are rapidly given off from the margins of these plicae lying in the tonsillar fossa, which readily cover the entire surface of the fossa with a new epithelial layer.

Why we should avoid wounding the aponeuroses of the muscles which form the tonsillar fossa if we would avoid contractions is, I think, self evident.

With regard to the technique for operating the tonsil with these points in mind, I would state, that no tonsillectome or mechanical device for removing the tonsil—no matter how skillful the operator—can be used, unless the plicae are previously dissected, without destroying, in most cases, the whole of the anterior plica. I have had the opportunity for making observations upon this point. Aside from this, I would state that each clinician should adopt the technique with which he can best obtain the above results.

From my own observation and experience, I find it absolutely impossible to dissect a markedly adherent plica from the tonsil, without tearing or lacerating it so that it becomes of little or no value, by using a blunt dissector of any kind—I, therefore, always use in my plicae dissections a keen, sharp-pointed knife. With this, I not only dissect the plicae from the tonsil, but I also cut the attachment of the plicae from the tonsil capsule. The capsule of the tonsil may then be separated from the tonsillar fossa by any instrument with which you are least likely to wound the aponeuroses of the muscles which form this fossa, always having care not to wound the loose folds of your plicae while you are making this later dissection. The tonsil scissors, or better, Dr. Norvall Pierce's sharp spoon dissector, I find especially serviceable in this work. The base of the tonsil I usually remove from its attachment by means of the snare.

# THE EAR IN THE RECENT INFLUENZA EPIDEMIC.*

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During the recent epidemic of influenza my attention was frequently called to the ear complications of this disease. I had repeatedly come in contact with patients suffering from lagrippe or influenza, but not as frequently as in the epidemic just passed.

The complications encountered were numerous and varied. The most frequent of which was otitis media, most often non-suppurative but in quite a few instances suppurative. Eustachian tube involvement was present in quite a few cases and in two cases where the mastiod was involved I had to operate. I give it to you for what it is worth, but in one week I had four cases of Aspergillus infection, three of these patients had just recovered from the flu, the other had not had flu at all. In Chicago, otitis media occurred as a complication, but nothing like in proportion as of 1890. (Strouse).[1]

The question of mode of entrance and causative factor in influenza has not as yet been definitely decided or agreed upon and very few of the writers have even ventured an opinion.

The infection might gain entrance through the nose and throat as Wollstein and Goldbloom[2] found that during life the sputum contained B. influenzae in 13 to 17 cases in which it was searched for. Hamburger[3] says it is a disease that involves the entire body, involving the head and head sinuses, brain and meninges rather regularly. His early cases showed rather strictly the influenza bacillus. In the second and third weeks the Pfieffer bacillus in the sputum was taken over by the pneumococcus. Howard,[4] of Baltimore, made cultures from naso-pharnyx, sputum and blood, finding in addition to B. influenza, green streptococci, pneumococci, and staphylococci. He does not feel that any of the organisms isolated are the cause of epidemic influenza.

That influenza seems to be a mixed infection in the widest sense of the term is the theory of Sahli,[5] he claiming that droplet infections do not occur with a single bacterium but always with a number of bacteria, which are often of a mixed species. These bacteria may form a complex virus and mixed cultures are liable to separate and turn into a single culture. The pneumococcus, the streptococcus, the influenza bacillus, and possibly still others form an obligate group, in this way explaining influenza to be an obligate complex infection. In one of his cases the sputum was swarming with influenza bacilli one day, and the next day the sputum was a thick culture of the pneumococcus, thus in twenty-four hours the complex virus had become completely transformed in the course of the single infection.

The onset of the disease is sudden, with acute fever, but usually without a definite chill. The incubation period is usually about twenty-four hours. There is a cough and very definite symptoms of pharyngitis. The throat may show only an involvement of the anterior pillars, usually though the entire throat is intensely red.

Pritchett and Stillman[6] cultivated B. influenza from the mouths and sputa of 93 per cent of cases of influenza and broncho-pneumonia. It was present in the mouths of 43 per cent of normal individuals.

I find practically all cases who had a chronic non-suppurative otitis media characterized only by slight deafness developed an obstinate case with pronounced deafness after having had influenza. I did not notice that these people were any more susceptible to suppurative otitis than those who had previously had no trouble with their ears, but I found those of the first class more obstinate in healing and the hearing more often impaired after healing.

The theory of infection by way of the nose and throat was given credence in

*Read in Section on Eye, Ear, Nose and Throat, Annual Meeting, Muskogee, May, 1919.

that all over this country as well as abroad nasal sprays, throat gargles and masks were recommended not only by health authorities but by the physicians as well. In some places the wearing of a mask was compulsory. In this connection I am reminded of an article I saw in "Tonics and Sedatives," Journal A. M. A. It is said that during the flu epidemic in San Francisco when all public meeting places were closed, and the entire population was compelled to wear masks to prevent the spread of the disease, a drunken man was overheard muttering, "Well, I am an old man, but I have lived my time and am ready to quit. I have lived to see four great things come to pass—the end of the war, the churches closed, saloons left open, and the women muzzled." As to the virtue of the mask, I am unable to state, but I see no reason why it should not be valuable as a prophylactic measure, providing the nasal spray and throat gargle are used at the same time.

The majority of cases of which I have knowledge complained very early in the disease of being hard of hearing. Stengel[7] refers to the disturbance of hearing as having occurred in a small number of cases, but seems to think it was less frequent in the epidemic just passed than has occurred in the epidemics of pseudo-influenza. It was about as common in the epidemic of 1889-90, as in the recent epidemic. A gram-negative bacillus which answered very closely the original description of Pfieffer was obtained from the sputum of a considerable proportion of the cases studied. In some laboratories it was found in as many as 80 per cent of all cases studied. They found in addition to the Pfieffer bacillus, streptococci, pneumococci, Friedlander's bacillus, and occasionally various other organisms.

Alfred Friedlander et alia[8] stated that later in the disease acute catarrhal otitis media was common, but fortunately always cleared up without perforation of the drum. That was not the case with me, as fully 20 per cent of the cases coming under my observation, either ruptured the drum or a parencentesis was necessary.

Nazum and Associates[9] showed that, "Among complications of the disease, all patients developed a unilateral or bilateral purulent otitis media. Pure cultures of pneumococci were isolated from eight discharging ears, the hemolytic streptococcus in two patients, and the streptococcus viridans in the remaining case. One child developed an acute and fatal mastoiditis." Both of my operative cases of mastoiditis were in adults and during the convalesence.

Major Hamburger[10] says that, "In the early days of the epidemic, patients died in two or three days, consequently pus did not have time to form, but later in the epidemic the virulence became lessened and cases ran the entire course, with purulent otitis media and mastoid complications."

Capt. Happel[11] reported that, "Very little otitis media occurred up to time epidemic subsided, but recurrent suppuration from old lesions were noted." There seemed to be no especial time or stage of the disease with me when the otitis would show up. In some cases it appeared within a few days of the onset while in others it came late in the disease or in convalesence.

A theory has been advanced by some writers which is entirely at variance with the preceding theories in that they claim the infection is caused by a hemolytic streptococcus in the blood. I am not defending or condemning either theory, as I am not a bacteriologist and therefore am not in a position to pass judgment on this.

Beals, Blanton and Eisendrath,[12] in their article say that, "It seems certain, therefore, that with hemolytic streptococci in the blood stream, etc." Thereby claiming the hemolytic streptococci as the causative factor, which seems plausible.

Stone and Swift[13] offer the most conclusive proof of the hemolytic streptococci and yet they do not claim it as the cause of epidemic influenza. They give some interesting results of necropsy of cases coming under their care at Ft. Riley, Kan. "In 17 cases (41.4 per cent) either one or both middle ears were involved. In two cases an acute congestion was found. In the others, a thin, yellow pus filled the cavity as well as the mastoid cells. There was no bone necrosis in the mastoid, even in cases of several days duration." The two cases of mastoiditis that were

operated by me were both of long standing and both showed bone necrosis, one extensive with quite a quantity of pus which was neither thick nor thin. The other showed a small amount of necrosis and a very small amount of thin yellow pus. "Extension of the infection to the cells of the mastoid was present in every case examined. The prevailing type of infection was a hemolytic streptococcus, which was present singly or in combination in 35.3 per cent." They also show that the hemolytic streptococcus was not present in the sputum of patients examined, but in nearly all cases where a blood culture was made it was found. "The B. influenzae was the predominating organism obtained in 35.7 per cent of 300 nasopharyngeal cultures from influenza patients. The evidence strengthens the belief that the influenza bacillus, or some unknown virus, merely served to predispose to pulmonary infection with organisms commonly known to produce pneumonia, such as the pneumococcus and streptococcus hemolyticus. It is well known that the tonsil crypts harbor the hemolytic streptococcus in from 75 to 85 per cent of those examined by various workers. It seems fair to assume that its presence in the tissues of the body may not be, in the vast majority of instances, incompatible with health; but it is evident in view of the necropsy findings here recorded, that whatever organism or virus may be responsible for the acute respiratory invasion, the hemolytic streptococcus, whether introduced from within or without, became the most serious factor in the production of high mortality."

Dr. F. L. Watson, of McAlester, early in the epidemic, made the statement that the hemolytic streptococcus was the prime factor in the epidemic of influenza and gave the following as his reason: "Subsequent findings of laboratory have borne out my early clinical assertion of November, 1918, that the sudden deaths with and without pulmonary edema following this disease were due to hemolytic streptococcus. This assumption is based upon the deduction of the similarity of the clinical symptoms to death from hemolytic streptococcus, reinforced by the death of a nurse from septicemia who was bitten on the finger by a man who died on the fifth day from the pulmonary type of the disease. Also the jaundice and falling of hair in those who recovered. The bacillus influenza with its powerful debilitating effect because of its rapid autogenous immunizing powers acted as an opsonin preparing the field by a lowered resistance to the onslaught of that lynx-eyed terror, hemolytic streptococcus, whose ever present watchers are only awaiting the lowering of those vital resistant forces, when suddenly they gain ascendency over their normal antagonists, and go right on to victory over mankind."

In an editorial in the Journal A. M. A., May 3, 1919, quoting from the article of Pilot and Davis,[14] they bear out the theory as advanced by Dr. Watson when they say, "The existing dormant organisms in the tonsils or throat may become enhanced in their virulence through symbiosis or in some unknown way by the primary virus, or by the bacteria, such as B. diphtheria, the pneumococcus, or the influenza bacillus. They may become active through the diminution of the resistance of the local tissues of the respiratory passages." If this be true, then the resistance of the ear is no greater than the respiratory passages, so it is possible for them to become active in the ear the same as in the respiratory passages or any other part of the body. "They may attain increased invasive powers through the lowering of the general resistance of the host overwhelmed by an acute or chronic toxemia. Probably all three factors are combined in certain diseases, though one factor often appears to be more important than the others. Thus, in acute respiratory and throat infections, streptococci seem to spread from the tonsillar crypts to the adjacent mucous surfaces, descend into the bronchi and lungs, and enter the blood stream from these tissues."

The article further states that from reports from bacteriologists in the army, antiseptic treatment of the tonsils has not given satisfactory results because the crypts cannot be reached effectively. Excision of the tonsils renders the throat free from the streptococci in most cases.

## SUMMARY.

1. The ear complications were not infrequent in the recent epidemic, but were rather frequent in most every one's practice with whom I have come in contact and from reports in the literature at my disposal.

2. No deaths occurred in my practice from ear complications, neither did any occur to my knowledge in this state.

3. From the reports at hand the systemic invasion of many organs and tissues by the infections responsible for the pneumonic process was evident at necropsy. This refers particularly to the brain and meninges, the middle ear, mastoid, and sinuses.

4. In forty-one necropsies, otitis media and mastoiditis existed in 40.1 per cent. (Stone and Swift.)

5. The pneumococcus was revealed in 56.1 per cent and the streptococcus hemolyticus in 41.1 per cent from cultures made from the lungs, pleural fluids, heart's blood, sinuses mastoids and tissue in 55 necropsies.

6. In 20 per cent of my cases the drum membrane ruptured or I did a parencentesis and relief was obtained.

7. The two cases of mastoiditis coming to operation had had no drainage. Both were in late convalescence.

8. The positive causative factor of epidemic influenza has not been established, but it is highly probable that it is the B. influenzae associated with the pneumococcus and hemolytic streptococcus.

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### POSTDIPHTHERITIC PARALYSIS.

A case of general postdiphtheritic paralysis in a 3-year-old boy and another in one aged 7, are reported by S. W. Boorstein, New York (*Journal A. M. A.*, Feb. 21, 1920). He describes the symptoms and varieties of this disorder. While severe, the disease may be curable. In the first case, he credits orthopedic treatment as probably of more value in hastening the recovery than the antitoxin administered. In the second case, which had lasted altogether two months, antitoxin was early administered, but still paralysis developed. In this case what skepticism he had as to the value of the orthopedic treatment in the previous case was dispelled by the greater and more notable success. The article is illustrated.

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### Poor Dad.

"Every one in our family is some kind of an animal," said Johnnie to the amazed preacher. "Why, you shouldn't say that," the good man exclaimed. "Well," said Johnnie, "mother's a dear, the baby is mother's little lamb, I'm the kid, and dad's the goat."

# PROCEEDINGS OF THE ST. ANTHONY CLINICAL SOCIETY.

Dr. Curtis R. Day, President. Dr. J. F. Kuhn, Secretary.

## Death Report.

**Dr. J. F. Kuhn.** *Influenza. Bronchopneumonia.*

Miss I., age 24. This young woman was brought to the hospital on a stretcher complaining of the following symptoms: weakness, rapid labored breathing, rapid pulse, temperature 102.4, and a cough with tenacious yellow sputum.

When I was first called to see her, in consultation, it was thought that she was a surgical case because she had nausea, vomiting, fever, and tenderness in the abdomen. She gave a history of gc. infection several weeks ago. She had also had a severe cold eight days previously. Her symptoms did not point definitely to any surgical condition and two days later she developed influenza, possibly of the abdominal type.

Twelve hours after her entrance to the hospital she had pains in each side and the signs of beginning pneumonia. Examination of the chest revealed dulness and diminished breath sounds over the lower left lobe, the axilla and interscapular areas. Increased fremitus over the lower half of the right chest. Numerous fine rales at both bases and over the upper part of the right chest. She developed a "to and fro" friction rub in the left side which was relieved somewhat by strapping with wide adhesive straps.

One day later, fine, moist rales all over right lung. Temperature subnormal, respiration 40, pulse 108, W. B. C. 17,600, Poly's 86. Sputum showed staphylococcus. No pneumococcus or T. B. She was given tincture digitalis q. six hours, sodium bicarbonate 30 grains every four hours, sedatives for pain, liquid diet and plenty of water.

Two days later the dyspnea was marked and there was beginning cyanosis of the face and hands. Flatness over the entire left chest from pleural effusion. The B. P. was 98-40. The respiration became more dyspneic and the heart weak and irregular.

She became unconscious and died from deficient aeriation of the blood.

Autopsy was not permitted.

## Case Reports.

**Dr. Antonio D. Young.** *Aneurism. Two cases.*

Aneurism has been recognized since the time of Galen. It has always been associated with exertion and infectious disease, but the most constant infection has been syphilis. At the present time it is rare not to find a positive Wassermann with this condition. In fact aneurism is often one of the first signs or manifestations of lues. Associated with it are high blood pressure and arteriosclerosis, the former probably resulting from the latter condition.

It begins as an endarteritis which leads to a destruction of the elastic fibers and the formation of dense connective tissue. The tunica media also becomes involved and there is a granular deposit of lime salts in the vessel wall, making it thick and hard.

Since the first few inches of the aorta receives the greatest force of the heart action, aneurism is most likely to happen at this place. The ascending portion and the arch are the most common sites.

The form depends upon the atheromatous changes within the vessel wall. If the sclerosis is symmetrical, the dilitation is alike on both sides and is apt to be fusiform in character. If the elasticity is lost on one side, the aneurism is sacculated. Dissecting aneurism with splitting of the media results from the ulceration or degeneration of one of the calcified plaques.

Aneurism is of considerable medico-legal importance. It is not infrequent that an injury or accident may result in liability suit for pathology that already existed.

The first case I wish to show is a woman 38 years of age who complained of neuritis of the right arm. She had pain in the back of her neck and her right shoulder. She had pulsation of the vessels, trachial tug, shortness of breath, and general weakness. There was no visible tumor, but the left radial pulse was strong and receding and the right was weak. Her Wassermann was 4 plus and there was no other source of infection. There was no involvement of the nervous system except hesitating speech. B. P. 195 systolic, diastolic not obtainable.

Percussion disclosed marked dulness in the upper mediastinum. It was necessary to use the x-ray and blood count to differentiate this from mediastinal tumor and enlarged mediastinal glands.

A harsh to and fro murmur is heard all over the cardiac area, and there is a bruit over the right chest.

The series of x-ray plates taken at different dates shows a fusiform aneurism which is enlarging rapidly.

The second case is a man 50 years of age in which the diagnosis can be made at a glance. He has a large pulsating tumor to the right side of the sternum covered over by skin and fascia. He has a typical text book case of aneurism. He has had destruction of the sterno-costal articulations on the right side which has caused intense grinding pain. His metallic cough and hoarseness are probably caused by pressure on the recurrent laryngeal nerve. There is shortness of breath but not as much weakness as is generally seen in cases so far advanced. Because of the dialated aortic ring, he has an aortic regurgitation and because of the increased work, a hypertrophy of the left ventricle.

In this case there is a 4 plus Wassermann with a history of infection twenty years ago.

**Dr. S. R. Cunningham,** *Injuries of the Spinal Column. Three cases.*

The skull and vertebral column have in common the function of protection to vital tissues. The vertebral column has the added responsibility of support and flexibility of the body and it is to this latter function that I want to refer in this clinic, not to be critical of past and present day teaching, but rather to show that we must exercise great care in early diagnosis and treatment of acute spine injuries.

One eminent orthopedist says, "It is only in the cases of injuries of the cervical region that the victim can walk about if the injury amounts to fracture or dislocation." Another authority says, "There is no recognized fracture of the spinal vertebra without some nerve root or spinal cord injury."

I will admit that the study of injuries to the spinal column (like injuries to the skull) is dominated by the possibility of associated injury to its contents. However, the group of cases I will show, prove that the amount of nerve and cord injury do not depend upon the amount of bone damage.

In injuries of the spinal cord it is important to determine the extent and location of the damage. In a complete lesion of the cord there is persistent, symmetrical, total, flaccid motor paralysis with sensory paralysis in the corresponding area, loss of tendon reflex, paralysis of the bladder and rectum and an absence of all motor and sensory irritative symptoms in the paralyzed area.

In a partial lesion there is sensation and partial motion with signs of regeneration. If control of the bladder and rectum is lost, it is soon regained.

Let us consider the method of examination of a patient who has sustained a spinal column injury. If he is brought in on a stretcher unable to stir, he has lost the supporting power of the spinal column or he has sustained an injury to the nervous system, or possibly he may be suffering from both. Beginning at the upper extremities, there are certain positions assumed that are characteristic of lesions in a definite location. If the arms are movable down to the finger tips

and the patient can adapt them to any position desired, the injury is below the first dorsal segment. If the hands are half closed, the elbows flexed and the forearms moderately pronated on the chest, the injury is about the level of the seventh cervical segment.

If the arms are above the head and rotated outward with the fingers semiflexed, the forearms supine and the elbows bent, the lesion is in the sixth cervical segment. There is a blocking of the nerves to the subscapularis, pectorales major and minor, pronatores and triceps. If the arms lie prone to the side and are completely paralyzed, the damage is in the fifth cervical segment and the nerves to the deltoid, biceps, supinators, rhomboids and the supra and infraspinatus are blocked, any damage above this point affects the phrenic nerve and death results from paralysis of the diaphram.

Paralysis of the pupillary control with a contracted and fixed pupil, indicates a disturbance of the sympathetic branch from the first dorsal segment. Lesions of the second, third, fourth, fifth and sixth dorsal segments cause paralysis of the intercostal muscles and is not so important.

The next most common injury is from the first to the second lumbar vertebra. The disturbance is below the abdomen. There may be crushing injury to the vertebra without any injury to the cord itself. In that case the ankle colonus is negative, the reflexes are prompt, and there is mobility of the legs. But if the legs are limp, whether the reflexes are exaggerated or abolished, there is contusion or impingement of the cord. I want to emphasize the importance of an x-ray on every case of back injury. So many times the injuries to other parts of the body may cause one to overlook a fracture of the vertebra which has no cord manifestations. Injuries in the lower dorsal segments give symptoms limited entirely to the lower extremities and if it is in the cauda equina, it is of less importance.

Paralysis of the vasomotor nerves is indicated by hyperemia of the paralyzed extremities and usually congestion of the corpus cavernosa penis which, if irritated, may pass into a state of erection. Sensory paralysis is indicated by the inability to tell heat from cold and sharp from dull objects.

**Case No. 1.** Admitted to the hospital August 15, 1919. The first case is a well developed young negro man who was thrown from his automobile when he collided with a passenger train. He was unconscious for a few minutes but was mentally clear when he came into the hospital. He had motor paralysis of the lower extremities and paralysis of the bladder and rectum. On first examination no deformity was found, but there was a localized tenderness in the lumbar region. Babinski and ankle clonus were negative, but both knee jerks were exaggerated. X-ray showed a fracture and dislocation of the first lumbar vertebra.

He was put up in a plaster jacket extending from under the arm pits to the knees. He now wears a close fitting jacket extending from the arm pits over the crest of the ilia. Some of the symptoms began to clear up early, but he was catheterized twice a day for thirty days. It is much to the credit of the intern that there was never a sign of cystitis, which is one of the most frequent complications of injuries of this kind. Boric acid irrigation was used each time and the urine was kept acid by using acid sodium phosphate and urotropin.

As this patient walks across the floor he has almost normal gait except a toe drop which may be corrected by supporting the foot at right angle while waiting for nerve regeneration or possibly by tendon transplant at a later date.

**Case No. 2.** Entered the hospital December, 1918, seven months after the injury. This case shows that bone destruction does not always give cord symptoms. The patient became overbalanced while lifting a barrel of oil, and fell against a ladder. He considered it a sprain and would have continued to work had it not been for the pain in his back. It was seven months after the accident before he came for treatment, having been in the hands of chiropractors for some weeks just previous to admission to the hospital

X-ray shows a fracture of the seventh and eighth dorsal vertebra with con-

siderable destruction of the bodies of the vertebra. This is a case in which early diagnosis and treatment would have meant everything. Now he has a kyphosis in the dorsal region and is unable to sit or stand without support. There has never been any evidence of cord or nerve injury. He has worn a well fitting plaster jacket for the past eight months and is here now for examination looking to further treatment. It is my opinion that a bone graft offers him best results at this time.

**Case No. 3.** Admitted to the hospital December 24, 1917. The last case illustrated the importance of early treatment. This young man was injured by falling five stories through an elevator shaft striking on top of the elevator. There was a compound fracture of both legs, a fracture of two ribs, and many bruised and lacerated wounds. We overlooked the spine until he started to sit up in a wheel chair two or three weeks later when he said his spine "gave way." X-ray, which should have been taken at first, showed a crushed first lumbar vertebra and a dislocation of the second. He wore a plaster jacket from over his shoulders to his hips for eighteen months. At the present time there is good flexibility of the spine and he complains of no weakness. You will see by the x-ray plates that there was great crushing and great angulation of the spine. There were no signs of cord or nerve injury at any time.

## DISCUSSION.

**Dr. A. D. Young:** Trophic disturbances appear early in these cases and, if there is severe contusion of the cord, prove fatal in a few hours. If the cord is severed, the reflexes should be exaggerated theoretically, as a matter of fact they are abolished.

The injured segment is usually one or two above that indicated by the anesthetic zone because of the overlapping of the nerve fibers.

In the majority of these cases there is retention of urine, but the bladder will overflow automatically if it gets too full.

**Dr. Horace Reed:** In the second case of the man who was lifting the weight, there is a possibility of a lesion having already existed. The first manifestation of a tubercular spine is a sudden giving way under unusual strain. Of course, no x-ray was made for months but the question is, did he have the injury because of the fall or did he fall because of already weakened vertebra.

If there are signs of cord injury, operate early, but if there is a transverse lesion there are no hopes of repair. The foot drop is due to an injury to the nerve. If the foot is held at a right angle to the leg, it puts the muscles at rest and gives the nerve a chance to regenerate.

**Dr. LeRoy Long:** No doubt there are many cases of broken backs without cord injuries. It happens often in miners and industrial workers. If the spine is hyperflexed, the injury is apt to be a crushing injury of the body of the vertebra with a tearing away of the ligaments. In extreme cases it may pinch the cord or sever it entirely.

Don't operate if there are any signs of function. The injury is hard to locate and regeneration may take place without operation.

**Dr. Cunningham** (closing): If we could distinguish between contusion and compression, the question of when to operate would be less difficult to solve. One author claims the only indication for operation is in cord symptoms from depressed fragments. If there is already an open wound with the signs of compression, operate. But in cases of paraplegia, wait several days; the patient is not a good operative risk and the regeneration may begin early.

In case No. 2, he was a strong, healthy man of good habits and family history. I do not believe there was pre-existing pathology because he had been working every day and the fact that he was able to lift that much, argues against caries. Considerable bone destruction is expected in an untreated fracture of seven months' standing, or rather several weeks mistreatment by chiropractors.

# JOURNAL OF THE OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XIII MUSKOGEE, OKLA., MARCH, 1920 NUMBER 3

PUBLISHED MONTHLY AT MUSKOGEE, OKLA., UNDER DIRECTION OF THE COUNCIL

DR. CLAUDE A. THOMPSON, EDITOR-IN-CHIEF
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ENTERED AT THE POST OFFICE AT MUSKOGEE, OKLAHOMA, AS SECOND CLASS MAIL MATTER, JULY 28, 1912

THIS IS THE OFFICIAL JOURNAL OF THE OKLAHOMA STATE MEDICAL ASSOCIATION. ALL COMMUNICATIONS SHOULD BE ADDRESSED TO THE JOURNAL OF THE OKLAHOMA STATE MEDICAL ASSSOCIATION, 508 BARNES BUILDING, MUSKOGEE, OKLAHOMA.

The editorial department is not responsible for the opinions expressed in the original articles of contributors.

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Local news of possible interest to the medical profession, notes on removals, changes in address, deaths and weddings will be gratefully received.

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## EDITORIAL

### YOUR ADVERTISERS; DOCTOR.

Once more, at the risk of being charged with harping on an old subject, we wish to call attention of every reader of this, their own Journal; their own property; to the importance of giving every consideration to our advertisers. In the first place they publish your Journal for you, their patronage lifts a burden we formerly found rather heavy; in that respect they, with us, are growing better all the time. A glance at the columns they occupy will convince one of their importance to us. Secondly, their class and ethical standing is irreproachable; outstate advertising is never accepted until thorough investigation by experts shows them worthy of your confidence and co-operative support; those offers for space tinged with suspicion are rejected promptly, and allowed to spend their money for propagation of questionable goods with "Independent" medical publications, blessed with elasticity of business ethics.

These, and the consideration that those who aid you should receive your aid in return, should cause all of us to not forget them when the time to purchase comes. Every little purchase helps them; price and quality being equal, it is a very unfair act to forget them and spend your money with houses who do not support you. Read the advertisements; clip their coupon offers and give your friend a trial at least.

### THE MEDICAL PROFESSION OF OKLAHOMA.

Since 1902 we have been in a position to observe the medical man of Oklahoma. We were present when the Indian Territory and the Oklahoma Association combined and formed the Oklahoma Medical Association, and from thence onward

our progress has gone forward by leaps and bounds until today the profession presents a front second to none. During this same period we have visited the leading medical centers both in this country and abroad and have tried to pay particular attention to the various techniques exhibited in these numerous clinics. Today we are prepared to invite whomsoever that are interested to visit not one, but any of the larger cities in Oklahoma and look in on operations being performed, or the methods employed in clinical work by any one of the leading men in these several places. Compare it with what may be seen in the large, the larger the better, medical centers. You may be surprised.

We are certain that you will come again. C. W. H.

## A UNION OF DOCTORS.

### STRIKES AGAINST PATIENTS.

Vienna, Feb. 2—The hospital physicians of Vienna, with their assistants, struck today.

Almost coincident with the receipt of the foregoing dispatch, came one from Portland, Ore., stating that Otto Hartwig, the president of the Oregon Federation of Labor, was planning a movement to organize the Portland physicians, surgeons and dentists into a union to affiliate with the American Federation of Labor. According to Hartwig, these professional men desire such a union.

The proposed union, Hartwig says, would guarantee the physicians, surgeons and dentists an eight-hour day; the right to picket offices of non-union medicos; the power of the sympathetic strike and a "living fee."

It is probable that Hartwig is wrong in his impression that physicians, surgeons and dentists of Portland are in favor of the proposed union. It may be that he is merely the too-credulous victim of propaganda spread by his assistants.

It is difficult to bring one's mind to a belief that reputable physicians, surgeons and dentists would enter such a union. These men are in professions the duties of which consist in the alleviation of pain and the saving of human lives. When they voluntarily entered these professions they became morally bound to relieve suffering at any time and any place. It is inconceivable that any American physician or surgeon would refuse to work more than eight hours a day when there were patients in urgent need of medical attention; or that American physicians and surgeons would quit a patient at acritical period of a disease or leave him on the operating table in the midst of an operation in order to answer a call of a union leader to start a strike. Nor is it conceivable that an American dentist would refuse to give treatment to a patient suffering from toothache or an abscess or other serious affection within the dentist's power to cure.

But the walkout of hospital physicians and their assistants in Vienna shows the dangerous possibilities of extending the labor union strike weapon into the medical professions. And Vienna, with its enormous number of sick persons, is in worse condition than American cities to stand such a crisis.

It is to be hoped that Oregon is the only state in America where any labor leader even thinks he has reason to believe that physicians, surgeons and dentists will enter a labor union and use the strike to raise their fees. It is hardly possible that an indorsement of such an organization could be secured from members of these professions except in a bolshevik city like Vienna.—Daily Oklahoman, February 5, 1920.

There need be no worry on this score. Physicians above all others realize the rule of the survival of the fittest. They realize, too, that injection of the principle of trades unionism will inevitably result in smothering individual initiative; that the mass will be drawn down to the level of the mediocre. His success is dependent on himself solely, with proper affiliation with his fellow, but not to the end that all will find the level of the lowest. His ideal is to bring the lowest, least informed, most inefficient up to the standard. Unionizing him would make of him a machine, largely responding to the edict of the preponderant average present in all bodies of men. A cardinal principle of his creed is that the needy shall never suffer by his studied activity; he extends relief first, inquires, often with disappointment for his reward after his good work is rendered; protected by no class legislation of lien on every tangible vestige of his patients' goods, as is the unionized laborer, he indeed stands as exponent of the principle that the trials of men are the problems of all. The walking delegate or "Business Agent" knows him not; his hard-earned knowledge is expended in the face of opposition from the designing, the profiteer on human misery, the scientist and mushroom faddist born

of yesterday, tomorrow a memory. If he ever really unionizes himself, bolshevism will be as a summer day compared to the power for ill he will hold. But such a revolutionary hour will not come. We believe he will always remain what he is—a patriotic man proof to the illogical blandishments of passing hysteria.

## PERSONAL AND GENERAL NEWS

**Dr. S. H. Williamson,** Duncan, underwent an operation for appendicitis in January.

**Dr. M. C. Comer,** Clinton, has returned from a visit to the New Orleans eye, ear, nose and throat clinics.

**Dr. H. C. Manning,** Cushing, underwent an operation for appendicitis at an Oklahoma City hospital February 7th.

**Dr. F. P. Von Keller,** Ardmore, sustained painful injuries when his machine collided with an unlighted street-sweeper.

**Ottawa County Excise Board** set aside $2,500 to aid the U. S. Public Health work being done in that county. A full time health officer is contemplated in the plans.

**Tulsa's new Hospital,** to be erected under charge of the Catholic Sisters of the Sorrowful Mother, will soon assume tangible form. The plant in its entirety, it is said will cost one million five hundred thousand dollars.

**Sapulpa** seems now to be assured of a modern hospital. Necessary additional funds have been raised by the Kiwanis Club, definite plans coming within the funds available have been adopted and construction will soon begin.

**Dr. Howell B. Guinn,** Captain, Medical Corps, 3rd Infantry, stationed at Eagle Pass, Texas, formerly of Tulsa, writes that he will soon be discharged. Dr. Guinn states that he missed his Journal for several months, and compliments its contents and appearance highly, on receiving the back numbers.

**West Main Maternity Sanitarium,** 1547 West Main St., Oklahoma City, is a newly established institution noted among our advertisers. Dr. M. H. Newman is Medical Director. The institution will handle maternity cases only, and will give especial attention to the care of unfortunate expectant mothers and their children; seeking to avoid publicity and place the infant in suitable homes, if desired. Dr. A. L. Hinkleman will do the laboratory work and a competent staff of consultants has been selected.

**Dr. Katherine L. Storm,** of Philadelphia, is announcing the removal of her office from 1541 to 1701 Diamond Street, Philadelphia. The new building which Dr. Storm has purchased, has treble the capacity of her present building, and is being equipped with every facility for quick and exact work. Dr. Storm is justly proud of the ever widening demand for the Storm Binder and Abdominal Supporter, and is planning to maintain her reputation for immediate response to each order.

**Increased Compensation** for disabled soldiers is the immediate result of the Sweet Bill. This act not only increases amount now being paid, but is retroactive and those receiving compensation heretofore also receive the amount due them from time of first award as additional payment. Many other features affecting the soldier, too numerous to mention here, are in force. A card to the Bureau War Risk Insurance, Washington, for information will obtain full explanation of every phase of the matter.

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**Oklahoma County Medical Society** announces the following program of future meetings:

Sat. Jan. 24—(1) Hyperthyroidism. (a) Dr. A. L. Blesh. Discussion: 1. Dr. R. M. Howard; 2. Dr. R. M. Balyeat. (2) Why I use three drugs. (a) Dr. A. B. Chase. Discussion: 1. Dr. J. M. Alford; 2. Dr. H. C. Bradley.

Sat. Feb. 14. (1) Work, Opportunity and needs of Oklahoma Health Dept. (a) Dr. J. L. Martin. 1. Dr. W. H. Miles; 2. Dr. Geo. Hunter; 3. Leo Minton; 4. C. E. Clifford.

Sat. Feb. 28—(1) Diagnosis of obscure late Syphilitic Lesions. (a) Dr. J. W. Riley. Discussion: 1. Dr. C. J. Fishman; 2. Dr. Rex Bolend. (2) General application of Laboratory Findings. (a) Dr. J. H. Roddy. Discussion: 1. Dr. Wm. Bailey.

Sat, March 13—(1) Diagnostic considerations of Hematuria. (a) Dr. J. A. Mraz. Discussion: 1. Dr. W. J. Jolly. (2) Deep Urethral Infection. (a) Dr. C. B. Taylor. Discussion: 1. Dr. W. J. Wallace; 2. Dr. C. R. Day.

Sat. March 27—(1) Important considerations relative to Tissue examination. (a) Prof. Turley. Discussion: 1. Dr. W. Langston; 2. Dr. W. H. Bailey. (2) Modern Interpretations of skin eruptions relative to Internal Medicine. (a) Dr. E. S. Lain. Discussion: 1. Dr. Lea A. Reily; 2. Dr. J. M. Postelle.

Sat. April 10—(1) Tuberculosis of the Throat. (a) Dr. E. S. Ferguson. Discussion: 1. Dr. J. C. McDonald; 2. Dr. L. A. Newton. (2) Status of Caesarian Section. (a) Dr. W. W. Wells. Discussion: 1. Dr. J. C. Hatchett; 2. Dr. Dick Lowry.

Sat. April 24—(1) Diagnosis of chronic Gastro-intestinal conditions. (a) Dr. A. W. White. Discussion: 1. Dr. D. D. Paulus; 2. Dr. J. E. Heatley. (2) Significance of Blood Pressure. (a) Dr. J. H. Maxwell. Discussion: 1. Dr. Wm. Langsford; 2. Dr. L. E. Andrews.

Sat. May 8—(1) Symposium of Cancer of Uterus. (a) Pathology—Dr. W. Langston; (b) Diagnosis and Surgical Treatment. 1. Dr. R. M. Howard. Discussion: a. Dr. J. E. Harbison; b. Dr. S. R. Cunningham; (b) Electro-x-ray & Radium Therapy. Dr. M. M. Roland.

Sat. May 22—(1) Osteomyelitis. (a) Dr. LeRoy Long. Discussion: 1. Dr. E. D. McBride; 2. Dr. W. K. West. (2) Deviation of Nasal Septum. (a) Dr. D. D. McHenry. Discussion: 1. Dr. H. C. Todd; 2. Dr. A. L. Guthrie.

Sat. June 12—(1) Conditions frequently mistaken for Appendicitis. (a) Dr. M. E. Stout. Discussion: 1. Dr. J. E. Kuhn; 2. Dr. J. S. Pine. (2) Routine technic in the management of labor. (a) Dr. J. G. Binkley. Discussion: 1. Dr. R. E. Looney.

Sat. June 26—(1) Fluids in the pleural cavity. (a) Dr. Lea A. Riely. Discussion: 1. Dr. L. J. Moorman; 2. Dr. M. Smith. (2) The ansurdities of Medicine. (a) Dr. Antonio D. Young.

All meetings are open to the presentation of clinical cases.

### DOCTOR B. E. BRASELTON.

**Dr. B. E. Braselton, of Miami, died in that city February 9, 1920, from pneumonia. Dr. Braselton was 43 years of age at the time of his death. Interment was had at Bridgeport, Texas. His untimely answer to the call of the reaper is regretted by many friends. During the war he was commissioned as Captain in the Medical Corps October, 1918, served at Camp Logan and was discharged from that camp March 4, 1919.**

## MISCELLANEOUS

### THE FUNCTION OF A MEDICAL SOCIETY.

A Medical Society is not a trade union, a business organization, nor a conference devoting its time to a discussion of hours, pay, cost, competition, restraint, or finance. It is an organization of men gathered together that they may better serve the public by keeping abreast of the times through the exchange of experience and the work of others. The work of the medical society is to make bigger, broader, kindlier men—men who can go out from its meetings not only more skillful and learned in their science, but more worthy the respect and confidence the degree Doctor of Medicine should bring. The medical society asks that men engaged in God's noblest calling work one with another and not one against another. It stands for honesty, truthfulness, progress, unity, and self-betterment that we may be better practitioners of our art and better men.—Slyster.

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### DOCTOR OR SPECIALIST.

"A good doctor is made of a well-educated man who feels deeply the needs of the sick and believes himself called to live and work for their cure and the prevention of the same diseases in the well. This consecrated man must be educated in all that the labors of medical men in the past have discovered and be guided onward to the very boundary of our exact science and into the disputed territory of ignorance and perhaps of superstitution. These excursions should be led by a veritable medical scout who has in practice all the arts of pioneering, adventure and discovery. The motive for all these efforts in education should be constantly kept prominent, and the forgetful medical student should be tripped by his teacher into perpetual consciousness that it is the duty of the doctor to his patient."—Bayard Holmes.

All half-baked or other underdone specialists should be exterminated. No physician has a right to that title unless he has been trained to avoid the pitfalls and dangers which may imperil the health and life of his patient. It is nothing short of a crime to turn a patient over to an uninstructed and ignorant novice and tell him to "go ahead and operate." Just so long as such a state of things exists, and unfortunately such a state does exist here and now, just so much worse it is for specialism and for the patient. Let every man have at least three years of varied training in general practise, let him devote all his time and energy to learning a specialty under a competent instructor for at least one year, then submit him to a test ("Regents," or Council of his Fellows), and we shall have specialists who are not an everlasting discredit to the profession.—Irving Wilson Voorhees.

## TO ALL PHYSICIANS WHO SERVED THE FEDERAL GOVERNMENT DURING THE WAR:

An association of Medical Veterans of the World War was organized at Atlantic City, in June, 1919, at the time of the meeting of the American Medical Association, and a constitution and by-laws adopted. About 2,800 physicians have already joined and all others who are eligible are invited to join the society.

The Constitution states that "The Dominant Purpose of this Association Shall be Patriotic Service. The objects of this association shall be: To prepare and preserve historical data concerning the medical history of the war; to cement the bonds of friendship formed in the service; to perpetuate the memory of our medical comrades who made the supreme sacrifice in this war; to provide opportunity for social intercourse and mutual improvement among its members; to do all in our power to make effective in civil life the medical lessons of the war, both for the betterment of the public health and in order that preparedness of the medical profession for possible war may be assured."

The organization of the society provides for state and local organizations wherever the members desire it, and in some states, such as Wisconsin, organization has already been effected.

It is desired by the National association that those who are already members meet together in larger and smaller groups, at the first convenient opportunity, and effect a local organization with a chairman and secretary, and also at the next meeting of the state medical society that a place be provided on the program for the Medical Veterans.

The organization of the society is based on democratic principles and it is hoped that the members who have already joined will take the initiative and organize their own state and local societies.

The national organization will assist by furnishing application blanks and copies of the constitution and by-laws, and, if desired, stationery.

The first things to be done after the organization of a state society is effected is to elect a councillor to the general council of the organization, to represent the state society at the next annual meeting of the Veterans at New Orleans on the first day of the meeting of the American Medical Association, April 26, 1920.

A badge or button for members of the society is being made and will soon be ready for distribution.

Yours very sincerely,

F. F. RUSSELL,
Secretary.

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## THE IDEAL GENERAL PRACTITIONER.

He is virile by virtue of his environment; he is self-reliant from his isolation; he is resourceful from necessity; he exalts common sense above fine theories; he deals with all conditions and preserves a breadth of vision, grasps general principles, and, failing the finer technical knowledge of the specialist, is spared the distortion of his perspective. He knows his patient as a man and a friend and not as a commodity, and he it is who exemplifies best and most consistently that unselfish regard for others that glorifies medicine.—Meara in *Boston Med. and Surg. Jour.*

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## OPPORTUNITY.

Master of human destinies am I!
Fame, love and fortune on my footsteps wait,
Cities and fields I walk; I penetrate
Deserts and seas remote, and passing by
Hovel and mart and palace, soon or late
I knock unbidden once at every gate!
If sleeping, wake; if feasting, rise before
I turn away. It is the hour of fate,
And they who follow me reach every state
Mortals desire, and conquer every foe
Save death; but those who doubt or hesitate,
Condemned to failure, penury and woe,
Seek me in vain, and uselessly implore,
I answer not and return no more!

—John J. Ingalls.

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## CELEBRATES THIRTIETH ANNIVERSARY.

The Thirtieth Anniversary of the founding of The Abbott Laboratories is being celebrated this month. This firm has recently established the precedent in the pharmaceutical field of placing their employes on a profit sharing basis.

It is a notable fact and one worthy of commendation that more new medicinal chemicals, and council-passed products have come from the house of Abbott during the past five years than from any other firm in this country.

## SOUTHERN CHIVALRY IN MONTENEGRO.

In rehabilitating the American Red Cross hospital in Cettinje, Montenegro, which was left by the Austrian armies in an unspeakable filthy and dilapidated state, male labor was used—perhaps the first time in the history of the little mountain kingdom that such a thing has happened. On the arrival of the Red Cross, a request was sent to the prefect for thirty-eight men to help in the work of cleaning up. The women have always done such work before, and so naturally the prefect sent thirty-eight women. But this did not agree with the plans of Captain William Watts, who was in charge of the work.

"This hospital is going to be built on the American plan," said Captain Watts firmly. Captain Watts is from Georgia, and the idea of employing women to work was abhorrent to him.

Neither the prefect nor the women, however, seemed quite to grasp his point of view. "What is the matter?" one of the women demanded. "Don't we look strong enough?" And the old prefect looked on with a puzzled expression. For centuries the women have done this sort of work in Montenegro, and he shook his head as much as to say: "These American ideas! Sentimental piffle!"

But Captain Watts won his point in the end; Southern chivalry compromised with Balkan custom; and a gang of men went to work on the drains, while the women looked on with smiles, and an air of superiority, as who should say; "H'm! They'll never be able to stand it. Who ever heard of men doing heavy work like that!"

But before many days the work was finished, and the hospital was running at capacity. The old social order had been reversed without a male suffrage campaign. And the hundreds of sick in Cettinje were being efficiently cared for in the renovated wards.

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## MILITARY TRAINING.

M. W. Ireland, Surgical General, U. S. A. (*Journal A. M. A.*, Feb. 21, 1920), says that no real survey of the man power of the United States has ever been made, but it is well known that many surprising facts would be developed if it were. The Civil War gave a certain indefinite survey at that time, but since then tremendous changes have occurred, and the human system has not yet adjusted itself to them. For a long time scorn has been pointed at the Regular Army and Navy because of their high percentage of venereal disease—the reason is that we *knew* the amount among soldiers and sailors and published it to the world. It is almost always acquired from without a military reservation. It is interesting, therefore, to review the statistics furnished by the draft. The cessation of hostilities before American battle casualties had become significant as compared with the losses of other nations, has given a favorable opportunity to consider the brighter side of the war and to estimate the manifold benefits that have been obtained. Roughly classified, these are: (1) the improvement in physical development as a result of outdoor life, good food, regular exercise and strenuous physical training. The improvement in the physical development of the young man in the Army was most striking. First examinations showed a stream of naked men, awkward, narrow chested with flabby muscles and often a stoop. Contrasted with this, the inspector was tremendously impressed by a similar line of naked men presenting themselves for examination just before demobilization. They were bronzed, erect, broad-chested soldiers, with fine muscular development and a characteristically alert and self-confident air. The gain in weight was notable, and there is no good reason to believe that a six months' training of the youths of our land at the age of 19 would not produce similarly good results. (2) Detection and cure of many obscure and latent pathologic conditions, such as hookworm, malaria, venereal infections, etc. A list is given of some of the important defects discovered. Incomplete statistics show that of the 225,000 cases of venereal disease during the war, 200,000 were present before the men joined the Army. Examination of the physical conditions of the adult male population of military age awakens the nation to the necessity for efforts directed toward limiting the possibility of a continued increase in physical defectives. Another advantage of military training in the war is in the education in sanitation and personal hygiene in camps, both by precept and practice, as well as the education in sex relations. Protection against the dangers of illicit indulgence is also of great importance, as is also the training in discipline and the development of respect for authority. Lastly, Ireland mentions the protection by vaccination of 5,000,000 men against the danger of contracting typhoid and paratyphoid for several years to come. Universal military training would, he thinks, give us a wonderful opportunity for a physical survey of the youth of the land, and many of the disabilities from which men suffer in youth and which they carry through life, could be corrected and avoided in the future. The mental defectives could be classified, and the general good that could be accomplished is unlimited.

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## Matches.

A New York physician was giving an informal talk on physiology. "Also," he said, "it has lately been found that the human body contains sulphur." "Sulphur," exclaimed a girl in a blue and white blazer. "How much sulphur is there then in a girl's body?" "Oh," said the physician, smiling, "the amount varies." "And is that," asked the girl, "why some of us make so much better matches than others?"

# COUNCIL ON PHARMACY AND CHEMISTRY
## AMERICAN MEDICAL ASSOCIATION

(The following articles produced by advertisers in this Journal have been accepted for inclusion with New and Non-Official Remedies by the Council on Pharmacy and Chemistry.)

### PROPAGANDA FOR REFORM.

**Dionol—The Glorified Petrolatum.** The exploitation of Dionol is based on the theory: (1) The brain is a generator of neuro-electricity; (2) The nerves are the conductors of this electricity; (3) The nerve sheaths are the insulators; (4) Wherever there is local inflammation, the nerves are short circuited owing to a breaking down of the insulation resistance of the nerve sheaths; (5) This results in "an escape of neuro-electricity"; (6) Dionol coats the nerve sheaths with a nonconducting layer, and this restores the insulation and "stops the leak." Whether this theory was invented to give a "reason for being" for Dionol, or whether Dionol was first invented and it became necessary to evolve a theory that would give some plausibility to the claims made for this etherealized petrolatum, we are unable to say. In any case, the theory and the product are exploited together. The value of the "case reports" sent out for Dionol may be estimated from a report featured under the heading, "infected wound . ." signed "Dr. W." This "Dr." appears to be an osteopath whose specialty, according to his advertisement in his local newspaper, is "Catarrhal Deafness and Hay Fever, Acute and Chronic Diseases," Jour. A. M. A., Feb. 7, 1920, p. 410).

**Hypno-Bromic Compound.** A Vermont physician reports that Hypno-Bromic Compound, manufactured by H. K. Wampole and Co., is sold by druggists without prescription, though it contains in each ounce: cannabis indica, 1 grain; morphine, one-quarter grain; potassium bromid, 48 grains; hyoscyamus, 1 grain; chloral hydrate, 96 grains. He writes that he has three young women who have become addicts to the preparation as a result of thoughtless prescriptions from physicians. By visiting the various drugstores in town, these addicts have been able to obtain an ample supply of the preparation. Hypno-Bromic Compound is more than an unscientific mixture: it is a dangerous product that should not be sold indiscriminately over the drug counter. Physicians who prescribe such mixtures and druggists who indiscriminately sell such stuff are disgracing two honorable professions (Jour. A. M. A., Feb. 7, 1920, p. 410).

**Eupad and Eusol.** Eupad is a powder composed of equal parts by weight of boric acid and chlorinated lime (containing 25 per cent available chlorin). Eusol is thus made: (a) 25 gm. of eupad are shaken with one liter of water, allowed to stand for some hours and filtered. (2) To one liter of water add 12.5 gm. chlorinated lime (25 per cent chlorin), shake vigorously, and add 12.5 gm. boric acid in powder and shake again. Allow to stand, decant and filter. If the official chlorinated lime containing 30 per cent available chlorin is used, a proportionately smaller quantity should be sufficient. (Jour A. M. A., Feb. 7, 1920, p. 413).

**Influenza Vaccines.** The *Medico-Military Review*, a semi-monthly mimeographed publication sent to medical officers of the Army by the Surgeon-General's Office, has the following on the use of vaccines against influenza: "YOU ARE REMINDED that so far a comprehensive analysis of results obtained by the use of monovalent and polyvalent vaccines in the prevention of influenza has not demonstrated their value. Much carefully controlled experimental work is now being carried out on this subject both in civil institutions and in the Army, and any worthwhile advances will be reported in the *Review* from time to time. If a prospective vaccine is developed, it will be prepared at the Army Medical School for general distribution and all medical officers will be duly notified. The general use of the present commercial polyvalent protective against influenza is not considered desirable. Numerous telegrams and other requisitions are being received for influenza vaccine. In view of the fact that no prophylactic influenza vaccine is available, such requisitions should be discontinued," (Jour. A. M. A., Feb. 14, 1920, p. 466).

**Auto-Hemic Serum.** This is an asserted cure for laziness, ugliness, frigidity and many other things. For many years L. D. Rogers, the discoverer of Auto-Hemic Serum, was the chief owner of the National Medical University of Chicago—a low grade school of the "sun-down" variety now out of existence. A few years ago, Rogers was exploiting a cancer serum and selling shares in the "Cancer Research Laboratory and Hospital." In 1915, he exploited a Japanese consumption cure. Then came the Auto-Hemic Serum, exploited by means of "The National Society of Auto-Hemic Practitioners" and the "North American Journal of Homeopathy," the official organ of the "Auto-Hemic Practitioners," and of the "American Medical Union." Auto-Hemic Therapy is described as "The Missing Link in Medicine," and "consists in giving the patient a solution made by attenuating, hemolizing, incubating and potentizing a few drops of his or her own bood and administering it according to a refined technic developed by the author." The "technic" of this new therapy may be learned through a mail order course costing one hundred dollars, "cash-in-advance." One of the chief virtues claimed for the serum is that of developing in the patient who takes it an unbounded energy; it apparently makes him want to work himself to death (Jour. A. M. A., Feb. 14, 1920, p. 477).

**Eumictine.** The Council on Pharmacy and Chemistry reports that Eumictine is ineligible for New and Nonofficial Remedies because (1) it is unscientific; (2) it is sold under unwarranted therapeutic claims; (3) the name "Eumictine" is blown in the bottle for the obvious purpose of bringing the product

to the attention of the public when it is prescribed in the original package, and (4) the name is therapeutically suggestive and not in any way descriptive of its composition. Eumictine is a preparation from the laboratories of Maurice Le Prince, Paris, France, and is marketed in this country by George J. Wallau, Inc., New York. According to the American agent, "each capsule is supposed to contain 20 centigrams of Santalol, 5 centigrams of Hexamethylene-Tetramine," (Jour. A. M. A., Feb. 21, 1920, p. 542).

**Du Pont Cotton Process Ether.** Recently the "News Service" of the E. I. Du Pont De Nemours and Co., Inc., circularized the press of the country with a "filler" about "The New Du Pont Ether." The Du Pont Ether and the claims made for it are seemingly based on the work of one man, James H. Cotton, M. A., M. D., Toronto, Canada, who published an article on "Cotton Process Ether and Ether Analgesia." However, Cotton did not give the composition of the "New" ether, nor does his work appear to have been corroborated. In reply to an inquiry from the Secretary of the Council on Pharmacy and Chemistry, the Du Pont Chemical Works declared that the "procedure of manufacture and the exact composition" of the ether was regarded as confidential information. The use of a therapeutic agent of unknown composition is unscientific and contrary to the best interests of the medical profession and the public, but it is many times more serious for physicians to use a secret or semisecret substance as an anesthetic.

**Barbital (Veronal) Addiction.** The constant use of even small doses of barbital (veronal) affects the central nervous system. Those taking the drug habitually become much debilitated and seem less able to stand moderate doses. Death has occurred from a 3 gm. dose in addicts. (Jour. A. M. A., Feb. 21, 1920, p. 544.)

**Antiplasma.** A nostrum called Antiplasma or Rudolph's Malarial Specific is being exploited in the South. It is claimed that the preparation was "developed by J. J. Rudolph, M. D.," and that "There is only one way to cure Malarial Fever. Take 15 drops of Rudolph's Malarial Specific on sugar or in molasses, three times daily for six days." The A. M. A. Chemical Laboratory reports that Antiplasma is a pale yellow, viscid liquid having an odor resembling a mixture of oil of turpentine and oil of wintergreen. The preparation responded to tests for rosin, turpentine and methyl salicylate. It was impossible to determine whether the product was a mixture of the three, or some natural turpentine-like product "thinned" with methyl salicylate. The chemists conclude that a mixture of 53 parts of bleached rosin, 41 parts of oil of turpentine and 6 parts of methyl salicylate would probably have whatever anti-malarial properties Antiplasma possesses (Jour. A. M. A., Feb. 28, 1920, p. 618).

**Pharmacy by Act of Congress.** For years the manufacturers of "patent medicines" have assured us that the alcohol in their nostrums was used only as a solvent, preservative or extractive agent. Thus, Wine of Cardui at one time contained 20 per cent of alcohol and the manufacturer claimed that no more was used than was needed as a solvent and preservative, and that attempts to substitute another preservative had proved futile. Then came national prohibition and now Wine of Cardui contains 10 per cent of alcohol and its preservative powers have been fortified by the addition of benzoates (Jour. A. M. A., Feb. 28, 1920, p. 607).

## NEW BOOKS

**Under this heading books received by the Journal will be acknowledged. Publishers are advised that this shall constitute return for such publications as they may submit. Obviously all publications sent us cannot be given space for review, but from time to time books received, of possible interest to Oklahoma physicians, will be reviewed.**

### MODERN SURGERY.

By J. Chalmers DaCosta, M. D., Samuel D. Gross, Professor of Surgery, Jefferson Medical College, Philadelphia, Pa. Eighth Edition, Revised, Enlarged and Reset. Octavo of 1697 pages, with 1177 illustrations, some of them in color. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, $8.00 net.

The author of this remarkable successor to its many successful predecessors, noting the difficulties under which revision was accomplished, says: "Parts of it were written at odd times and in strange places. The war was raging and all the forces of the world seemed devoted to slaughter. The routine of peace times was but a faded memory. Millions were dead and it seemed more millions were to die. Civilization trembled in the balance. Mercy, Christianity, Liberty, Law, Humanity were threatened with annihilation. . . . these elements conspired to settle upon me as a vast obsession full of sorrow and of heartbreak, paralyzing thought of other things . . . ." His invaluable associates, scattered over the earth on the call of arms, the author revised and wrote much of his material on board a United States Naval Transport. Despite difficulties incident to such disturbances, his work has not suffered, but stimulated by spirit which accomplishes a task under stress, he presents a work brought up to the moment. The problems and lessons of war are presented in a multiplicity of settled rules and improvements on the old order, insofar as sober judgment warrants, but realizing that much of the literature on the newer matters has yet to be weighed, conservatism dictates incorporation of the sane, proven advances. Newer methods of preventing tetanus are included, several pages being given to this very fatal, if neglected in the preliminary care, disease. Treatment of infections, compound fractures, head and chest injuries, being of first importance are accorded relatively wide discussion.

One of Oklahoma's thorough student surgeons, asked if he had Da Costa's Surgery, replied; "Yes; it is my most valued surgical guide and most consulted book. Hardly a page is free from marginal notes and references of practical use to me." This sufficiently expresses the practicability of the work, as well as saying all that may be as to its intrinsic worth to the busy man.

# OFFICERS OF COUNTY SOCIETIES, 1920

| County | President | Secretary |
|---|---|---|
| Adair | S. R. Evans, Stilwell | Jos. A. Patton, Stilwell |
| Alfalfa | | |
| Atoka | | C. C. Gardner, Atoka |
| Beaver | | |
| Beckham | | |
| Blaine | | J. A. Norris, Okeene |
| Bryan | A. J. Wells, Calera | J. L. Austin, Durant |
| Caddo | Geo. C. Campbell, Anadarko | Chas. R. Hume, Anadarko |
| Canadian | | J. T. Phelps, E. Reno |
| Carter | R. O. Early, Ardmore | Robt. H. Henry, Ardmore |
| Choctaw | G. E. Harris, Hugo | Reed Wolfe, Hugo |
| Cleveland | | Gayfree Ellison |
| Cherokee | W. G. Blake, Tahlequah | P. H. Medearis, Tahlequah |
| Comanche | Jackson Brashear, Lawton | E. B. Mitchell, Lawton |
| Coal | | W. T. Blount, Tupelo |
| Cotton | | |
| Craig | Louis Bagby, Vinita | R. L. Mitchell, Vinita |
| Creek | | H. S. Garland, Sapelpa |
| Custer | K. D. Gossam, Custer City | O. H. Parker, Custer City |
| Dewey | | |
| Ellis | | |
| Garfield | | L. W. Cotton, Enid |
| Garvin | J. R. Callaway, Pauls Valley | N. H. Lindsey, Pauls Valley |
| Grady | H. C. Antle, Chickasha | U. C. Boon, Chickasha |
| Grant | | |
| Greer | G. W. Wiley, Granite | J. B. Hollis, Mangum |
| Harmon | W. G. Husband, Hollis | Ray L. Pendergraft, Hollis |
| Haskell | S. E. Mitchell, Stigler | R. F. Terrell, Stigler |
| Hughes | | |
| Jackson | E. S. Crow, Olustee | J. B. Hix, Altus |
| Jefferson | W. M. Browning, Waurika | J. I. Derr, Waurika |
| Johnston | | |
| Kay | J. C. Hawkins, Blackwell | I. D. Walker, Blackwell |
| Kingfisher | C. O. Gose, Hennessey | H. O. Meredith, Kingfisher |
| Kiowa | J. A. Land, Lonewolf | J. M. Bonham, Hobart |
| Latimer | G. A. Kilpatrick, Wilburton | J. F. McArthur, Wilburton |
| Le Flore | S. C. Dean, Howe | Harrell Hardy, Poteau |
| Lincoln | A. M. Marshall, Chandler | C. M. Morgan, Chandler |
| Logan | | E. O. Barker, Guthrie |
| Love | | |
| Mayes | | J. L. Adams, Pryor |
| Major | | |
| Marshall | | |
| McClain | B. H. Slover, Blanchard | O. O. Dawson, Wayne |
| McCurtain | | |
| McIntosh | J. N. Shaunty, Eufaula | W. A. Tolleson, Eufaula |
| Murray | J. H. Simmons, Sulphur | W. H. Powell, Sulphur |
| Muskogee | P. P. Nesbitt, Muskogee | A. L. Stocks, Muskogee |
| Noble | | B. A. Owen, Perry |
| Nowata | | J. R. Collins, Nowata |
| Okfuskee | | H. A. May, Okemah |
| Oklahoma | Horace Reed, Oklahoma City | Tom Lowry, Oklahoma City |
| Okmulgee | J. Lee Riley, Henryetta | W. B. Pigg, Okmulgee |
| Ottawa | G. P. McNaughton, Miami | Fred E. Deal, Miami |
| Osage | David A. Yates, Avant | Benj. Skinner, Pawhuska |
| Pawnee | | E. T. Robinson, Cleveland |
| Payne | H. C. Manning, Cushing | J. B. Murphy, Stillwater |
| Pittsburgh | T. T. Norris, Crowder | F. L. Watson, McAlester |
| Pottawatomie | G. S. Baxter, Shawnee | O. L. Edwards, Shawnee |
| Pontotoc | L. M. Overton, Fitzhugh | J. G. Breco, Ada |
| Pushmataha | | E. Guinn, Antlers |
| Rogers | | |
| Roger Mills | | |
| Seminole | | W. L. Knight, Wewoka |
| Sequoyah | | |
| Stephens | C. M. Harrison, Comanche | J. W. Nieweg, Duncan |
| Texas | W. H. Langston, Guymon | R. B. Hayes, Guymon |
| Tulsa | G. A. Wall, Tulsa | A. W. Pigford, Tulsa |
| Tillman | | |
| Wagoner | C. E. Hayward, Wagoner | C. E. Martin, Wagoner |
| Washita | | J. W. Kerley, Cordell |
| Washington | F. R. Sutton, Bartlesville | J. G. Smith, Bartlesville |
| Woods | | |
| Woodward | R. A. Workman, Woodward | C. W. Tedrowe, Woodward |